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SESSION 1
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GREEN CONSUMPTION IN A SUSTAINABLE ECONOMY

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Abstract
In a sustainable economy, environmental policies must support both a green production and a green consumption as well. Green consumption is a concept which takes into consideration the care for the environment, but also the importance of consumption of green goods healthy for the human body. The paper presents the concept of green consumption, its role and worldwide progress in this field. The literature shows that people's behavior changes and green consumption becomes more important in consumer choices.

Keywords: green consumption, sustainable economy, environmental protection, greendex

Classification JEL: D01, E21, Q01

1. INTRODUCTION

Worldwide, the development of any field of activity should be performed in accordance with the principles of sustainability, which can bring many advantages of competitiveness and productivity using the bio technologies and bio management. Sustainable economy involves developing an economy that ensures a balance between economic growth and environmental protection, so as not to affect future generations.

To the extent that the concerns about environmental protection have amplified, there is a change in the behaviour of economic agents both as producers and consumers. The new models of production and consumption must ensure reducing greenhouse gas emissions and fossil fuel consumption, in order to make the transition to bio-economy.

Increasing importance of environment in economic activity caused various changes in the branches of the economy and in the processes by which goods are produced and distributed to integrate environmental aspects into theories or models of normative or positive approaches that characterize the economic and business environment. The approaches on issues of "bio or green" economy gained attention in recent decades,

targeting elements on all stages of production and distribution of goods. The focus on issues concerning the environment not only ensures legal compliance or socially political success, but offers a real chance of achieving long-term sustainable business thrives.

2. GREEN CONSUMPTION – A NEW CONSUMER CHOICE

Green consumption is a concept which takes into consideration the care for the environment, but also the importance of consumption of green goods healthy for the human body. The consumers have become more and more interested in purchasing green products, accepting their higher price in exchange for assuring human health and environmental health.

Green consumption can be observed through social behaviour such as consumption of organic food, recycling, reuse, limiting over consumption and energy consumption, use of environmentally friendly transport, development of new sources of energy that do not affect the environment. Thus, consumer behaviour, marketing strategies, production processes, business management have been influenced by green consumption, in order to develop of a sustainable economy. (Withanachchi, 2013)

Ottman and Terry (1998) considers that the environmental issues must be included in the whole lifecycle of products from product development to promotion, distribution and recycling. On the other hand, the governmental policies, in the context of current economy in which the environment gets an important role in every field, require measures for assuring long-term economic sustainability. Thus, both by governmental effort and by the attitude of consumers the production and distribution of green products are stimulated. In this context, the development of green consumption and production, the green marketing and management strategies, allow all stakeholders to understand the business model in a holistic, healthy way.

As a result of green consumption, consumers have a great influence on supply and demand for green products, promoting and stimulating green consumption will support green production and sustainable development. Thongplew et al. (2014) show that producers use the energy and environmental efficiency of products to build green images and narratives at product level as starting point for influencing consumption through its contribution to a better environment.

In literature, green or sustainable consumption is a widely debated topic, being a vital aspect for a green and sustainable economy. Although consumer awareness, in terms of the environment increases, consumers are not always sufficiently responsible in relation to green consumption. Therefore, the infrastructure to support the promotion of green consumption have to be developed and consumers should be better informed and educated (for example, recycling can be done as long as there is an infrastructure in this respect).

At EU level, if current consumption patterns do not change, it is estimated that global resource use would quadruple over the next 20 years (European Commission, 2009). Thus, efforts to create a sustainable economy should be common and be supported both by citizens and by governments, through implementing economic policies that always take into account the impact on the environment.

Globalization, urbanization and economic growth have influenced the lifestyle and consumption pattern, to the detriment of the environment. However, in recent years, concerns for environmental friendliness have increased.

Greendex, an indicator that ranks customers from different countries according to the environmental sustainability of their behavior, highlights that green consumer behavior has increased in recent years. This indicator, calculated by National Geographic, considers green consumer behavior in housing, transport, food and goods categories. Results of the latest report show improvements in consumer behavior especially in the food category. Environmental concern has increased among consumers, 61% of consumers said that they are more concerned about the environmental problems and recognize that human activity affects the climate change. (Greendex, 2014)

Biswas and Roy (2015) show that in his choice the consumer of green products is especially influenced by his knowledge and perceptions, and the price of products. To increase the consumption of organic products, the consumer must accept and pay a premium price, that brings long-term benefits in terms of improving health and environmental protection for future generations. Lin and Huang (2012) show that the main determinants of consumer choice regarding green products are psychological benefit the desire for knowledge, novelty and less the price.

Green consumption is also influenced by the level of economic development and culture. In this way, consumers are more concerned about their health and environment health and may reject companies that have an inappropriate behaviour towards the environment. In addition to these factors influencing green consumption, an important role is played by education and that, according to studies, increases green consumption. (Ritter, et.al., 2015). Suki (2015) proves by an econometric analysis that green consumption is also influenced by loyalty degree of customers. Thus, the strategies of promotion, attraction and maintenance of customers are very important in increasing the consumption of green products. The promotion of green products through green marketing and the development of the supply chain of green products also contributes to green consumption.

3. CONCLUSIONS

Green consumer behavior depends on many factors, but mainly the consumer must understand the whole process and adopt an environmentally friendly lifestyle. It is difficult to measure such behavior because it is very complex, beeing strongly influenced by consumer values, habits and norms. (Peattie, 2010)

Green consumption brings benefits both individul as well as social and environmental and contributes to ensure a sustainable economic development. Therefore, it should be supported through information, education and government policies.

REFERENCES

1. Biswas A., Roy M., 2015. *Leveraging factors for sustained green consumption behaviour based on consumption value perceptions: testing the structural model*, Journal of Cleaner Production, Volume 95, pp. 332-340

2. European Commission, 2009. *Sustainable Consumption and production – a challenge for us all*, Available online at: http://ec.europa.eu/environment/archives/eussd/pdf/brochure.pdf

3. Greendex, 2014. Consumer Choice and the Environment – A Worldwide Tracking Survey, National Geographic, Globescan

4. Lin PC., Huang YH., 2012. *The influence factors on choice behaviour regarding green products based on the theory of consumption values*, Journal of Cleaner Production, Volume 22, pp. 11-18

5. Ottman J., Terry V., 1998. *Strategic Marketing of Greener Products.* Journal of Sustainable Product Design, No. 5, pp. 53-57

6. Peattie K., 2010, *Green Consumption: Behavior and Norms*, Annual Review of Environment and Resources, vol. 35, pp.195-228

7. Ritter A.M., Borchardt M., Vaccaro G.L.R., Pereira G.M., Almeida F., 2015. *Motivations for promoting the consumption of green products in an emerging country: exploring attitudes of Brazilian consumers*, Journal of Cleaner Production, Volume 106, pp. 507-520

8. Suki N.M., 2015. *Customer environmental satisfaction and loyalty in the consumption of green products,* International Journal of Sustainable Development and World Ecology, Volume 22, Issue 4, pp. 292-301

9. Thongplew N., van Koppen C.S.A., Spaargaren G, 2014. *Companies contributing to the greening of consumption: findings from the dairy and appliance industries in Thailand*, Journal of Cleaner Production, Volume 75, pp.96-105

10. Withanachchi, S.S., 2013. *Green consumption' beyond mainstream economy: A discourse analysis*, Future of Food. Journal on Food, Agriculture and Society, Vol.1, No.1, Summer 2013, Available online at: http://www.academia.edu/4196803/_Green_Consumption_beyond_mainstream_economy_A_discourse_analysis

LABOR MARITIME HAZARD ON BOARD OF A FISHING SHIP

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Abstract

The work is focused on the study of the marine environment, which is an inhospitable environment for man that is why any depreciation in the characteristics of the ship will lead to an increase in the professional risks that affect the crew. In this way, and following an analysis that addresses the final causes, occupational accidents can be classified in accidents resulting from the failure of the materiality of the ship or maritime accidents, and those derived from the activity itself or personal accidents. Unlike personal accidents, which by definition involve damage to the worker, marine accidents, regardless of their material results (loss of the ship or not), will not always result in injury to persons. In short, what are analyzed here are the occupational accidents in ships and their prevention measures, and the actions that could be taken on the human factor to avoid greater risks.

Keywords: Ships. Maritime accidents. Work accidents. Working conditions. Prevention of occupational hazards.

1. INTRODUCTION

Within the risk assessment, among the total number of maneuvers to be performed on board a vessel, the most important are those related to fishing. We must consider the following activities: maneuvers with the rigging in general, and in particular the starting and turning of the art; Maneuvers of weights suspended in the transfer of loads; Mooring and mooring maneuvers and the preparation of the rigging, are the ones of greater risk. The common risks will be those related to: the manipulation of cables, chains and cables, resulting in injuries due to scratches and cuts, drags, and blows of the elements when they are removed, those inherent in mechanical maintenance, due to the use On the deck of fishing machines and freezers, resulting in injuries due to entrapments and falls to different means, to the sea, aggravated by different risk factors, such as; The conditions of the environment and the environment, caused by the large movements of the ship itself. Ergonomic aspects, due to the difficult accessibility of some work areas. The slippage due to the non-slip deficiency used, and the dynamical blaws of the components of the rig.

2. METHODOLOGY

For the study and analysis of this work it has been carried out the evaluation of the risks in the work of the fishing sector under an empirical and legislative study of the situation of the labor risks in Spain.

3. LEGAL REGULATION OF PREVENTIVE DEVELOPMENTS IN FISHERIES

In this sense, a series of preventive and protective actions have been proposed that will act on both technical and environmental factors, as well as human factors. The technical factors that can cause occupational accidents are constituted by the equipment, facilities and processes, that will allow a certain situation of danger, to be transferred to another situation of damage in which we would have to take into account the probability and the consequences derived Of such a situation of danger. The risks of this type to be considered will not only come from the maneuvering, maintenance, control and supervision of the ship, but that they will correspond to the ones due to the fishing and the processing of the catches on board.

The protection constitutes the set of scientific knowledge and technological means that applied on the situation of occupational risk, prevents or minimizes the injuries to people or the material damages.

As wellas preventive and protective techniques will act on the so-called technical factors (set of elements or facilities that the worker uses to perform his productive task, with all the conditions that produce different risk situations) and human factors Worker with all their personal conditions, which create various risk situations).

Although the most important actions in the prevention and protection of risks are those that act on the technical factor or environment, sometimes we have no other choice but to act on the human factor.

Actions on the human factor can be preventive (safety at work, industrial hygiene, preventive medicine, preventive occupational psychology, training and information) or protection (personal protective equipment, first aid and rescue).

Law 31/1995, of November 8, on Prevention of Occupational Risks, contains a series of provisions to ensure the protection of workers' health against the risks arising from working conditions. Article 6 indicates that the regulatory rules will be those that will set and specify the more technical aspects of preventive measures, including those to ensure the use by workers at work of protective equipment to protect them Adequately from those risks to their health or safety that can´t be avoided or limited enough by means of collective protection or the adoption of measures of organization of work. Convention No. 155 of the International Labor Organization of 22 June 1981, ratified by Spain on 26 July 1985, provides in Article 16 (3) that employers must provide their workers with appropriate protective clothing and protection equipment appropriate, In order to prevent the risk of accident or adverse health effects.

In this regard, it should consider that, in the context of the European Union, the General Directives have established general criteria on workplace safety and health

measures, as well as specific criteria relating to Measures to protect against accidents and risk situations.

Royal Decree 763/1997 of 30 May on minimum safety and health requirements for the use by workers of personal protective equipment is the transposition into Spanish law of the content of Directive 89/656 / EEC, 30 November, laying down minimum safety and health requirements for the use by workers at work of personal protective equipment.

This Royal Decree belongs to the general regulations on occupational safety and health, constituted by Law 31/1995, of 8 November, so that, in addition to the specific obligations regarding the erection, use and maintenance of protective equipment Individual (PPE) employer must ensure the training, information and query of workers in compliance with the general precepts contained in Law 31/1995.

We have also said that prevention must be integrated in all areas of the company, for which a preventive activity planning must be carried out, it must be based on the actual situation of each company, knowing the magnitude of its risks, The assessment of the risks that can´t be eliminated and the implantation of the necessary control measures.

Annex IV to Royal Decree 773/1997 lists a number of non-exhaustive indications for the assessment of personal protective equipment. In these indications are contained; The risks to be covered, the source and form of the risks and the factors to be taken into account from the point of view of safety for the choice and use of personal protective equipment. The employer is obliged to: "determine the jobs in which individual protection must be used in accordance with the provisions of article 4 and specify, for each of these positions, the risk or risks against which protection must be offered , The parts of the body to be protected and the type of personal protective equipment or equipment to be used. Choose personal protective equipment in accordance with the provisions of articles 5 and 6, keeping the relevant information available in the company workplace and providing information on each equipment. Provide workers with free personal protective equipment to use, replenishing them when necessary. Ensure that the use of the equipment is carried out in accordance with the provisions of article 7. It ensures that the maintenance of the equipment is carried out in accordance with the provisions of article 7. "

Royal Decree 1216/1997, of July 18, which approves the Regulation on Safety and Health at Work onboard Fishing Vessels, states in Article 5 (4) that the shipowner must take into account the provisions Minimum standards of safety and health relating to the means of rescue and survival contained in Annex III to this Royal Decree. Likewise, article 5, section 5, says that it must take into consideration the specifications regarding individual protection equipment contained in Annex IV of this Royal Decree, without prejudice to the provisions of Royal Decree 773/1997. The obligations laid down in Annex III shall apply where required by the characteristics of the place of work or activity, circumstances or any risk on board a ship. This annex reads as follows: "Vessels shall be provided with adequate means of rescue and survival including adequate means to enable the workers to remove water and rescue equipment by radio, in particular a casualty locator equipped with a And hydrostatic device, taking into account the number of persons on board and the area in which the vessel is operating. All life-saving and survival means shall be kept in the correct place and in good working order and shall be ready for immediate use. Workers should check them before ships leave the port and during navigation. The means of rescue and survival will be inspected regularly. Workers must be properly trained and educated in anticipation of any emergency. If the length of the vessel exceeds 45 m, or if the crew is

composed of five or more workers, there must be an organizational chart with the precise instructions that each worker must follow in case of emergency. Each month, the workers should be summoned to the port or at sea in order to carry out a rescue exercise. These exercises should ensure that workers are fully aware of the operations they must carry out with respect to the operation and operation of all life-saving and survival means and that they have been exercised in them. Workers should be trained in the installation and operation of portable radio equipment, when available. "

Annex IV on minimum safety and health requirements for personal protective equipment indicates that the obligations laid down therein shall apply where required by the characteristics of the workplace or activity, circumstances or any risk on board Of a ship. In general, it clarifies that, they should apply: "when it is not possible to avoid or limit sufficiently the risks to the safety and health of workers with collective or technical means of protection, in which case these workers should be provided with individual protection equipment . Personal protective equipment used as clothing or above such clothing shall be brightly colored, contrast with the marine environment and be clearly visible.

Article 6 of this Royal Decree refers to training and information obligations. It states that, in accordance with articles 18 and 19 of the Law on the Prevention of Occupational Hazards, the shipowner, without prejudice to the responsibility of the master, will ensure that workers and workers' representatives receive adequate information on health And safety on board ships, as well as on the prevention and protection measures adopted pursuant to this Royal Decree. This information must be understandable to affected workers. The training should be given in the form of precise and comprehensible instructions and should relate in particular to fire-fighting, the use of life-saving and survival means and, for workers concerned, the use of fishing gear And traction equipment, as well as different signaling methods, in particular by means of signaling. Such training shall be updated when modifications of on-board activities make this necessary.

4. CONCLUSIONS

First. Unlike personal accidents, which by definition imply damage to the worker, maritime accidents, regardless of their material results (loss of the ship or not), will not always result in injury to persons. All this in spite of the fact that the accident itself of the ship implies an increase of the risks on the crew member.
Second. The protection constitutes the set of scientific knowledge and technological means that applied on the situation of occupational risk, prevents or minimizes the injuries to people or the material damages. Both preventive and protective techniques will act on the so-called technical factors (set of elements or facilities that the worker uses to perform his productive task, with all the conditions that produce different risk situations) and human factors Worker with all their personal conditions, which create various risk situations).
Third. Although the most important actions in the prevention and protection of risks are those that act on the technical factor or environment, sometimes we have no choice but to act on the human factor. Actions on the human factor can be preventive (safety at work,

industrial hygiene, preventive medicine, preventive occupational psychology, training and information) or protection (personal protective equipment, first aid and rescue).

REFERENCES

1. BURGOS OJEDA, Antonio: "Principios de investigación de la salud y el trabajo en las comunidades pesqueras". Universidad de La Laguna. La Laguna. 1992.

2. DIRECCIÓN GENERAL DE INFORMÁTICA Y ESTADÍSTICA. MINISTERIO DE TRABAJO Y SEGURIDAD SOCIAL:"Estadística de accidentes de trabajo".

3. DIRECCIÓN GENERAL DE MARINA MERCANTE. MINISTERIO DE FOMENTO: "Estadística de accidentes marítimos".

4. LAGARES FERNÁNDEZ, José Antonio": Equipos y medios de salvamento en los buques pesqueros". Fundación MAPFRE. Madrid. 1985.

5. Ley 31/1995 de 8 de noviembre de Prevención de Riesgos Laborales de 8 de noviembre (B.O.E. de 10 de noviembre de 1995)

6. MARI SAGARRA RICARD - GONZÁLEZ PINO, Enrique: "Manual de procedimientos de seguridad para operaciones del trabajo a bordo". Ministerio de Trabajo y Seguridad Social. Madrid. 1992.

7. MARI SAGARRA, RICARD - GONZÁLEZ PINO, Enrique": Supervivencia en la mar. Ministerio de Trabajo y Seguridad Social. Madrid .1990.

8. MARI SAGARRA, RICARD - GONZÁLEZ PINO Enrique:" Técnicas de prevención en seguridad e higiene del trabajo a bordo". Ministerio de Trabajo y Seguridad Social. Madrid. 1990.

9. MONTERO LLERANDI, José Manuel": Análisis sociológico de los accidentes laborales. El sector marítimo pesquero". Instituto Social de la Marina. Madrid. 1986.

10. MONTERO LLERANDI, José Manuel:" Condiciones de trabajo en el sector pesquero". Revista Salud y Trabajo- nº 72 .1989.

11. PEREZ ROJAS, Luís:" La seguridad de los buques pesqueros". Revista de Ingeniería Naval nº 568. 1982.

12. PINIELLA CORBACHO, Francisco; MACIAS, Juan Carlos": Fundamentos de seguridad marítima".- Universidad de Cádiz. Cádiz. 1996. R.D. 39/1997 de 17 de enero sobre Servicios de Prevención (B.O.E. 31-1-1997)

13. RODRIGUEZ SÁNCHEZ, José Luís:" Manual técnico de seguridad e higiene en la mar". Servicio Social de Higiene y Seguridad del trabajo. Barcelona. 1982.

14. SOPELANA RUÍZ DE ERÉNCHUN J.A.:" Accidentes marítimos". Revista de Ingeniería Naval nº 681.1992.

15. TASENDE SOUTO, José Miguel": Seguridad en la pesca de bajura". Revista MAPFRE Seguridad, nº 72. Cuarto trimestre 1998.

16. ZAPATA, Francisco": La Seguridad de los buques pesqueros". Revista de Ingeniería Naval nº 638.1988.

17. ZAPATA Francisco": La seguridad del transporte marítimo". Revista de Ingeniería Naval nº 537. 1980.

THE ROMANIAN YOUNG GENERATION'S WILLINGNESS TO CONSUME GREEN HOSPITALITY PRODUCTS

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Abstract

The hospitality industry generates environmental degradation through the construction of buildings, waste disposal, and water usage. Nowadays, a large number of customers show increased environmental awareness, being willing to pay more for environmentally friendly products/services. In Romania institutional arrangements to generate awareness of the necessity of sustainable development were numerous, exemplifying in this respect the actions carried out by the Ministry of Environment and Sustainable Development for introducing the european eco-label for tourist accommodation services and the camping services, as well as for promoting the use of the eco-label in Romania among interested hotels and guesthouses. Based on these aspects, the article presents the results of a quantitative marketing research conducted among the young generation from Braşov county. The main objectives of the research consist in identifying the level of information among Romanian young consumers of accommodation services from Brasov county regarding the eco-certification and environmental management systems applied in the Romanian hospitality industry and, also, to identify their intentions to consume the green accommodation products.

Keywords: *environmental awarness, hospitality industry, green accommodation units, young generation, quantitative marketing research.*

Classification JEL: *M31, Q50, Z32*

1. INTRODUCTION

Hospitality industry, as a major component of the tourism sector, is well-known for the water and electricity consumptions, as well as for the CO2 emissions and waste production. The level of responsibility of business corporations played the strongest role in driving customer's intentions to pay more for a green hotel (Manaktola and Jauhari 2007, p. 374; Han and others, 2011, p. 352). At the same time, customers' intentions and willingness to consume green tourism and hospitality products is a very important issue which influences the tourism sustainable development. In this respect, numerous analyses pointed out that public concern about environmental issues has been on the increase (Chen and Tung, 2014). Previous studies carried out at national level highlighted the low number of eco-certified accommodation units which operate in Romania (Băltescu and Boşcor, 2015, pp.152-153), and also the fact that the eco-certification for tourist accommodation services seems to be favourable especially in the Romanian rural context (Albu and Chiţu, 2014, p.103).

This article presents the results of a quantitative marketing research among young consumers of green hospitality products and its main objectives are the following:

• Identifying young generation's concerns regarding the consumption of green hospitality products;

• The ranking of the most important environmental practices in the hospitality industry;

• Identifying the young generation's intentions to consume green hospitality products.

2. RESULTS

The research method chosen was the survey based on questionnaires, and the sample included 264 students from the Faculty of Economic Sciences and Business Administration of Braşov. The majority, respectively 95,5% out of the respondents consider themselves as being concerned with the environmental issues, 54,5% of the subjects are informed about the presence of green hotels on the market, while only 2,3% of them had the experience of consuming accommodation services in an eco-certified lodging unit.

Another objective followed was to assess six of the main environmental issues considered important for the units management: energy consumption, gas consumption, water consumption, wood heating consumptions, waste problem and pollution, and to grant them values from 1 (the most important) to 6 (the most unimportant). This analysis was conducted only among those who said they were concerned about environmental issues. Weighted average values obtained for these six activities are presented in figure no. 1.
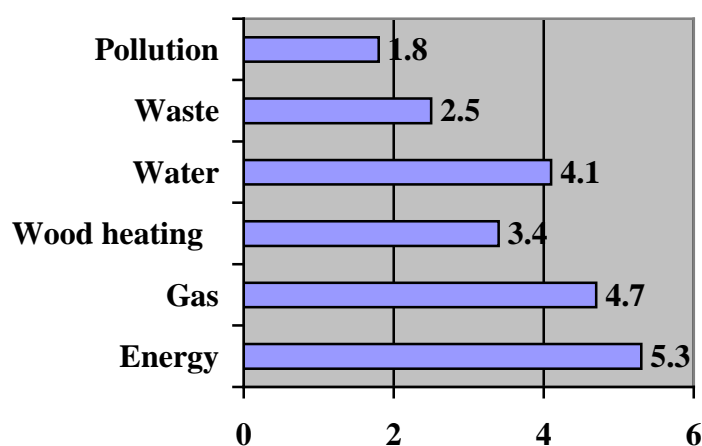
Figure no. 1. Weighted average values granted to the environmental practices within accommodation units

The most relevant issue is considered to be the pollution, which registered an average rating of 1.8, followed by the waste problem (2.5), wood heating consumptions

(3.4), water consumption (4.1), gas consumption (4.7) and the most unimportant aspect of environmental practices was considered the energy consumption, with an average value of 5.3.

Regarding the willingness to pay more for green hospitality products, 47,7% out of the respondents chosed for the positive answer. Moreover, in order to highlight their intentions to consume such products, 45% of the respondents selected the "I don't know" option, 29,5% said that they will "probably" purchase these services, 25% are determined to look for green hotels, 18% of the subjects selected the "less probably" answer option, while 9% are reluctant with the services offered by the green units.

3. CONCLUSIONS

The young generation behavior influences the perspective of sustainable development in tourism and hospitality. Although they appreciate responsible behavior they are not equally willing to pay more to get green hotel services. In this context, increasing the impact of educational activities as well as technological advancement that allows managers not to raise prices in order to support additional expenses related to the implementation of environmental protection measures are the pillars of future actions.

REFERENCES

1.Albu, G.R. and Chiţu, I.B., *Local Action Groups (LAGS) – An Important Instrument In Ensuring The Sustainable Development Of Rural Areas In Romania,* Bulletin of the Transilvania University of Braşov, Vol. 7(56), No 2, 2014, pp. 97-104.

2.Bǎltescu, C.A. and Boşcor, D., *The online potential for the development of eco-certified accommodation units in Romania*, Bulletin of the Transilvania University of Braşov, Vol. 8(57), No 2, 2015, pp. 149-156.

3.Chen, M-F. and Tung, P-J., *Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels,* International Journal of Hospitality Management, Vol. 36, 2014, pp. 221-230.

4.Han, H., Hsu, L-T.J., Lee, J-S. and Sheu, C., *Are lodging customers ready to be green? An examination of attitudes, demographics, and eco-friendly intentions,* International Journal of Hospitality Management, 30, 2011, pp. 345-355.

5.Manaktola, K. and Jauhari, V., *Exploring consumer attitude and behavior towards green practices in the lodging industry in India,* International Journal of Contemporary Hospitality Management, Vol. 19, Issue 5, 2007, pp. 364–377.

GREEN MARKETING STRATEGIES WITHIN ROMANIAN TOURISM ENTERPRISES

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Abstract
The present trends in the tourism sector reveal a constant pressure to implement sustainable development practices. The reduced number of eco-certified accommodation units in our country is an element which shows, on the one hand, the reluctance of owners to introduce environmental management practices and specific green marketing tools, and on the other hand, the lack of tourists' interest to consume green accommodation services. At the same time, tourism intermediaries show reduced interest in promoting eco-certified tourism products. This article aims to identify through a comparative analysis which is the actual status of Romanian eco-certified accommodation units, the extent to which Romanian intermediaries promote eco-certified tourism products and, also, to evaluate the perspectives of Romanian tourism enterprises to apply green marketing strategies.

Keywords: *sustainable development, green marketing, eco-certification in tourism, accommodation units, tourism intermediaries.*

Classification JEL: *M31, Q50, Z33*

1. INTRODUCTION

The United Nations 70th General Assembly has designated 2017 as the International Year of Sustainable Tourism for Development. Sustainable tourism is understood as "the development of a tourist product that is more respectful – or less harmful – of the environment, and which at the same time can offer a competitive advantage in the tourism market and ensure its long term economic viability" (Ayuso, 2006: 211).

Green marketing is a strategic issue, and institutional and stakeholder pressures drive the adoption of green marketing strategies (Chan and others, 2012). Menon and Menon (1997:54) proposed that an effective green marketing strategy should be endorsed by the principles of enviropreneurial marketing, which refers to "the process for formulating and implementing entrepreneurial and environmentally beneficial marketing activities with the goal of creating revenue by providing exchanges that satisfy a firm's economic and social performance objectives". Hotels are more concerned with the environmental policies and practices, and pursue official certifications for their initiatives (Geerts, 2014: 88).

The main objectives of this article aim the analysis of green marketing strategies within the eco-certified hotels from Romania and also the assessment of tourism intermediaries' approaches for developing and promoting sustainable tourism.

2. RESULTS

Within the EU countries the total number of eco-certified accommodation units is of 525 hotels and campsites, out of which 449 hotels and 76 campsites (European Commission, 2017). In this catalogue, the best represented countries are Italy and France which together lists 60% of these lodging units, while Romania has only two hotels, respectively Crowne Plaza from Bucharest and Saturn from Mangalia, on the Romanian Black Sea coast.

The Crowne Plaza Hotel from Bucharest, as a member of the InterContinental Hotels Group (IHG) uses the IHG Green Engage™ system, an innovative online environmental sustainability system that gives the means to measure and manage the hotel's impact on the environment. The member hotels can choose from over 200 'Green Solutions' that are designed to help them reduce their energy, water and waste, and improve their impact on the environment. The IHG Green Engage™ system has four levels of certification that hotels can achieve: level 1 is a requirement for all IHG hotels and those achieving level 3 certification or above can reduce energy use by up to 25% (IHG).

Hotel Saturn is a five star hotel located in the city of Mangalia and is the first hotel in Romania to receive the eco-label for tourist accommodation services. The management team identified specific tourism product strategies in order to enable sustainable development and implemented "Quality Management System" SR EN ISO 9001:2001 and "Environmental Management System" SR EN ISO 14001:2005 in accordance with the requirements of reference standard (http://www.hotelsaturn.ro/en/about-us).

It is important to highlight that both hotels support measures to promote sustainable development using the Internet communication strategies, mainly through the website. In order to ensure the efficiency of this communication marketing strategy, the website should be checked up and updated frequently (Marinescu and Frîncu, 2015: 24).

An important role in the success of tourism enterprises in the direction of environmental protection is played by the tourism intermediaries, as they allow information exchanges between producers and tourists. Unfortunatelly, the Romanian most important tourism intermediaries do not express willingness to promote eco-certified tourism units (Eximtur, Marshall Turism, TUI TravelCenter, Paralela 45), unlike major touroperators (i.e. TUI Group) which developed their own green marketing strategy (TUI Group).

3. CONCLUSIONS

The involvement of a growing number of tourism enterprises in environmental protection will contribute to awareness and educating consumers for responsible behavior. In this sense, good practices and previous expriences are valuable. On the other hand, innovation and going forward are essential. Marketing 3.0, for exemple, will enable future organic growth, as marketing of sustainable tourism will involve not only the tourists' expectations but also those of communities (Epuran and others, 2015: 936).

REFERENCES

1.Ayuso, S., *Adoption of Voluntary Environmental Tools for Sustainable Tourism: Analysing the Experience of Spanish Hotels,* Corporate Social Responsibility and Environmental Management, Vol. 13, Issue 4, 206, pp. 207-220.

2.Chan, H.K., He, H. and Wang, W.Y.C., *Green marketing and its impact on supply chain management in industrial markets,* Industrial Marketing Management, Vol. 41, 2012, pp. 557-562.

3.Epuran, G., Dovleac, L., Ivasciuc, S.I. and Tescaşiu, B., *Sustainability and Organic Growth Marketing: An Exploratory Approach on Valorisation of Durable Development Principles in Tourism,* Amfiteatru Economic, Vol.17, No. 40, 2015, pp. 927-937.

4.European Commission, *The EU Ecolabel Tourist Accomodation Catalogue,* 2017. Available at: <http://ec.europa.eu/ecat/hotels/en/list>, Accessed 28.03.2017.

5.Geerts, W., *Environmental certification schemes: Hotel managers' views and perceptions,* International Journal of Hospitality Management, Vol. 39, 2014, pp. 87-96.

6.IHG, *IHG Green Engage^™ System,* Available at: <https://www.ihg.com/hotels/gb/en/global/support/green_engage>, Accessed 2.04.2017.

7.Marinescu, N. and Frîncu, C., *The Importance of Online Promotion for Tourism SMES,* Studia Universitatis Babeş-Bolyai Negotia, Vol. 1, 2015, pp. 15-25.

8.Menon, A. and Menon, A., *Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy,* Journal of Marketing, Vol. 61, Issue 1, 1997, pp. 51–67.

9.TUI Group, *Better Holidays, Better World. Sustainability Strategy 2015-2020,* Available at: <https://www.tuigroup.com/damfiles/default/tuigroup-15/en/sustainability/Reporting/TUI-Group-Better-Holidays-Better-World-strategy_EN-8cad5293e208989e0d05a27ec7dae00a.pdf >, Accessed 3.04.2017.

10.http://www.hotelsaturn.ro/en/about-us, Accessed 2.04.2017.

RESEARCH ON THE ENVIRONMENTAL POLLUTION CAUSED BY WASTE RECYCLING PROCESSES

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Abstract

Typically, waste undergoes treatment and storage processes or are reintegrated into various products by recycling processes. Waste recovery is made through differentiated circuits on each category, by economically point of view, bein efficient the processing of sorted waste. However, recycling operations recorded a high degree of pollution. Thus, it can produce air pollution (emissions of harmful substances), water pollution and soil pollution. The paper analyzes various technological processes of recycling of composite materials waste. There were analyzed composite materials because in their structure are many components and recycling processes are complex. This analysis is done in terms of pollution by recycling technologies and allows the identification of effective technological processes, with favorable impact on sustainable development, both in terms of environmental impact and generated cost.

Keywords: sustainable development, waste, recycling process

Classification JEL: Q53, Q55, Q56

1. INTRODUCTION

Waste has become an extremely common element, but that, unfortunately, tends to acquire significant proportions. Regardless of their form (plastics, chemicals, organics or technologicals), waste management has become an important issue both in terms of pollution and the potential of obtaining raw materials. Sustainable development requires the promotion of a model that strikes a balance between economic growth, high quality of life and environmental protection, in the context of rational use of existing resources (Dobrota, 2013). Currently, in worldwide is put increasing emphasis on ensure sustainable development through innovation (Dobrotă D., Dobrotă G., 2017). As a result, innovative processes used in waste recycling generate beneficial effects on sustainable development. In the paper are presented some aspects regarding the need for a circular economy and innovative waste recycling methods so as to reduce pollution.

2. CIRCULARY ECONOMY – A NECESSITY FOR WORLDWIDE

One of the biggest problems of all mankind is the environmental pollution by waste resulted from activity in various fields. Environmental protection, and especially efficient waste management have become important concerns at european level, in the context of application the principles of sustainable development. Thus, ensuring to meet the needs of society today requires both rational use of resources and obtaining products through clean technologies. At the same time, it is increasingly obvious the need to obtain goods by reducing hazardous substances or materials, so recycling becomes more effectively. In this context, the requirements of circular economy (optimizing the resource consumption and maximize reuse percentage) can be implemented and respected. Moreover, the European Commission adopted a series of measures to build a circular economy in european level, implementing a platform for financial support in this regard. Practically, there are covered all the specific phases of a product lifecycle, from design, procurement of necessary materials, production and consumption and reaching the waste management phase. The design phase is extremely important, because we need to consider replacing the toxic materials and hard recyclable materials with biodegradable materials and limiting the amount of primary material resources through the identification of secondary resources. In the production process, it is necessary, if possible, to eliminate waste and reducing specific consumption. The consumption is important in terms of resulted waste and sorting and storage capacity in facilities, so they can be properly managed. Basically, the circular economy can be analyzed as a function of the form:

$$Ec = F(p, a, q, c, d)$$

where p is the design; a - supply; q - production; c - the consumer; d - waste management.

Volume increasingly greater of waste and its negative impacts on the environment and population requires the application of clear principles for managing them. At european level, in the context of measures adopted there was registered a decrease of amount of waste per capita in the period 2004-2014, from 1907 kg per capita to 1755 (without taking into account major mineral waste). At the same time, there is an increase in the rate of recycling of municipal waste from 35% in 2007 to 45% in 2015. Obviously, the analysis should be extended to a wider range (as far as publishing the data) so that to eliminate the economic crisis.

3. CONCLUSIONS

The conclusion of conducted research relates to the fact that waste management has become an important component of economico-social activities which it generates in terms of benefits and generated competitiveness. In addition, this activity generates employment, has important benefits for the environment and reduces energy consumption. However, the use of improper methods of recycling and regeneration can generate true disaster for the environment and population. As a result, the technical solutions proposed in the paper can be a starting point for ensuring the prerequisites for sustainable development while reducing air pollution and wastewater.

REFERENCES

1. Dobrotă, G., 2013, The economic components of sustainable development function at the level of the industrial enterprises, Fiabilitate si Durabilitate - Fiability & Durability Supplement, 1, 381-86.
2. Dobrotă D., Dobrotă G., An innovative method in the regeneration of waste rubber and the sustainable development, Journal of Cleaner Production, DOI: 10.1016/j.jclepro.2017.03.022

IMPACT OF CLIMATE CHANGES ON THE QUALITY OF LIFE AND ECONOMIC REPERCUSSION

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Abstract
Climate change and economic development have both an increasing impact on human health and on the quality of life. The reverse assumption is also true, since the human activity for improving economic and social development and well-being is affecting the environment. The European Environment Agency has already brought to the attention of the Member States some of the challenges the current modern society is facing and this paper aims at putting an even higher emphasis on the matter: climate variations, access to resources, economic development, outbreaks of certain infectious diseases and ways of improving food safety are analysed and correlated in order to determine specific conclusion and recommendations for the EU Member States future decisions as a more general approach and for Romania as a specific case study.

Keywords: *climate change, economic repercussion, food safety, access to resources*

Classification JEL: *I15, O44, Q5*

Modern society is facing different challenges than our predecessors a few centuries ago: some of these challenges, even though existed, were unknown to previous generations, while others became a problem due to the modernization of the society and the economy and after the Industrial Revolution.

Mechanization and development of new technologies have considerably improved human life and well-being, by providing new means of land exploitation, large-scale production, speedier transportations, access to information or to destinations unavailable before. But it also led to increased air and water pollution, massive deforestation, destruction of natural habitat of various species, depletion of the ozone layer etc. All these translate into more aggressive climate changes and more unpredictable weather conditions, which determine variations in agricultural production and outbreaks of infectious diseases, thus affecting human health and the quality of life.

According to the World Health Organization, the burden of food borne diseases is substantial: every year almost 1 in 10 people fall ill and 33 million of healthy life years are lost, while *Salmonella* is 1 of 4 key global causes of diarrhoeal diseases (World Health Organization Media Centre, 2016). *Salmonella* can pass through the entire food chain from animal feed, primary production, and all the way to households or food-service establishments and institutions and its outbreaks are more common during dry or rainy periods of time, since these bacteria can survive several weeks in a dry environment and

several months in water. Previous studies conducted on data regarding temperature variations and infectious diseases outbreaks in various regions of the world have shown that there is a strong correlation between extreme temperatures and rain falls and salmonellosis cases (Kowats et al., 2004; Lal, Ikeda, French, Baker, & Hales, 2013; Stephen & Barnett, 2016).

Also, water scarcity due to climate change has increased, especially in Europe, which may result in worsening of the provision of sustainable water services (European Environment Agency, 2011). Climate change affects nearly 50% of infectious diseases which are mandatory reported by EU Member States (European Environment Agency, 2017). Climate change affects the entire population, but their effects are closely linked to existing vulnerabilities (e.g. exposure, pre-existing diseases) and the ability to adapt to economic, social, and ecological factors.

This paper examines the correlation between temperature variations, access to water and sewage system and infectious diseases outbreaks in Romania's case in order to confirm previously stated hypotheses of climate changes impact on human health and quality of life. Economic repercussion of such influence consists of thousands of agricultural products withdrawn from the market and increased personal and national health expenditure. Comparison with other EU countries provides a wide range of discussion material and generates more means of rising food safety and quality of life.

One short conclusion of the paper is that we are facing the paradox of having multiple means of improving our lives, while these precise means are the ones affecting human well-being on the long term, determining high health expenditures, high costs in national economic accounts and the need to find better ways of addressing climate changes.

REFERENCES

1. European Environment Agency. (2011). *Safe water and healthy water services in a changing environment*. Luxembourg. https://doi.org/10.2800/78043

2. European Environment Agency. (2017). *Climate change, impacts and vulnerability in Europe 2016. An indicator-based report*. Luxembourg. https://doi.org/10.2800/534806

3. Kowats, R. S., Edwards, S. J., Hajat, S., Armstrong, B. G., Ebi, K. L., & Menne, B. (2004). The effect of temperature on food poisoning: a time-series analysis of salmonellosis in ten European countries. *Epidemiology and Infection*, *132*(3), 443–453. https://doi.org/10.1017/S0950268804001992

4. Lal, A., Ikeda, T., French, N., Baker, M. G., & Hales, S. (2013). Climate Variability, Weather and Enteric Disease Incidence in New Zealand: Time Series Analysis. *PLoS ONE*, *8*(12), e83484. https://doi.org/10.1371/journal.pone.0083484

5. Stephen, D. M., & Barnett, A. G. (2016). Effect of temperature and precipitation on salmonellosis cases in South-East Queensland, Australia: an observational study. *BMJ Open*, *6*(2), e010204. https://doi.org/10.1136/bmjopen-2015-010204

6. World Health Organization Media Centre. (2016). Fact sheet Salmonella. Retrieved 10 March 2017, from http://www.who.int/mediacentre/factsheets/fs139/en/

INDUSTRIAL SYMBIOSIS FOR PROMOTING THE GREEN ECONOMY IN ROMANIA

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Abstract

In the efforts to develop a sustainable, low carbon, resource efficient and competitive- ultimately the green economy- in the European Union, the industrial symbiosis is an important conceptual and practical approach with essential contribution. Latest developments in eco-innovation in Romania are those dedicated to implementing the circular economy, as will be analyzed and highlighted in the paper.

The main objective of the research is the analysis of the regional eco-innovation potential to play a decisive and major role in the transition to a green economy in Romania, by implementing industrial symbiosis as a high form of circular economy. The methodology is based on previous research outcomes of conceptual and empirical analysis in the areas of sustainable development, resource efficiency, green economy, sustainable forest management, eco-innovation parks as well as on a case study. The case study will present the main features, including the environmental and economic drivers and benefits of the industrial symbiosis by adding value by recycling wooden waste from logging within the ECOREG pilot eco-industrial park of Suceava County. The conclusions and policy recommendations are that planning, implementing and development of industrial ecosystems is needed in Romania, in view of sustainable regional economic development and a green growth.

Keywords: *green economy; circular economy; industrial symbiosis; eco-industrial park; wooden waste.*

Classification JEL: *O44, O47, Q32*

1. INTRODUCTION

As part of the research project "The role of eco-innovation for promoting a green economy in Romania", the main objective of this paper is a deeper analysis of the eco-innovation and eco-innovation parks potential to play a decisive and major role in the the transition to a green economy in Romania, by implementing industrial symbiosis as a high form of circular economy.

Based on previous own research outcomes (Frone Simona, 2015) there will be a deeper analysis emphasizing especially the synergic features of the eco-innovation parks

(EInvP) in re-cycling and re-using the resources, thus closing-the-loop as desired in the circular economy.

The methodology is based and develops on conceptual and empirical analysis in the areas of sustainable development, resource efficiency, green economy, sustainable forest management, eco-innovation parks as well as on a case study.

2. PAPER BODY

Background concepts and issues

The "Green Growth", "Green Economy" and "Green Industry" are several closely related concepts that have been developed and promoted in the last years, as a reaction to the global recession and climate change.

These various terms and connected concepts (Table no.1) have in common their objective to influence and thereby alter the prevailing political discourse, to transform the financial, economic and ecological crisis into win-win situations (UNIDO, 2013).

Table no.1 Background concepts of the research

Concept	Definition or characteristics
Green economy	In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive (UNEP, 2011).
Circular economy	In a circular economy, the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised. It is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy, ultimately the green economy (COM/2015/0614 final).
Eco-innovation	The introduction of any new or significantly improved product (good or service), process, organisational change or marketing solution that reduces the use of resources and decreases the release of harmful substances across the whole life-cycle (EIO website, www.eco-innovation.eu).
Eco-innovation park (EInvP)	The term eco-innovation park is used to define both eco-industrial parks and eco-innovative areas combining residential and industrial activities.
Industrial symbiosis (IS)	Industrial symbiosis traditionally engages separate industries in a collective approach to a competitive advantage involving physical exchange of materials, energy, water, and/or by-products as well as services and infrastructures shared at the industrial park scale to reduce environmental impact and overall production cost (Mansard, 2011).
Industrial ecosystem	The broadest application of industrial ecology's analogical approach is to describe manufacturing complexes as "industrial ecosystems". This idea suggests a web of interaction among companies such that the residuals of one facility become feedstock for another. Industrial ecosystems aim to minimize inefficiencies and the amount of waste created by mimicking natural ecosystems in industrial systems.

Source: Own synthesis mainly based on references

Practically speaking, a green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services (Frone Simona, 2017).

The main features of the green economy are:

o Ecological resilience for the ecosystem pillar;
o High resource efficiency for the Economy pillar;
o Enhanced social-equity for the Human well-being pillar.

As a form of the green economy, circular economy proposes the re-use of resources used in products whose shelf life has come to an end or which have lost their usefulness to construct new objects, the same quality or even better.

The European Commission through the Smart Specialisation Platform provides professional advice on the design and implementation of their research and innovation strategies for cooperation on issues related to innovation for the circular economy – in areas like industrial modernisation (EC Panorama, 2016).

This is very important since there are specific issues and priorities for sustainable economic development in each region of Romania, and still important hindrances that most regions have to surpass finding viable solutions to increase their innovative performance (Sandu Steliana, 2012).

Industrial symbiosis (IS), as part of the industrial ecology research field, focuses on the flow of materials and energy from local and regional economies.

The methodological approach leads to the need of a deeper analysis and understanding of the eco-innovation, eco-innovation parks and industrial ecosystems, as some important concepts related to the complex changes of paradigm required by the green economy (Frone Simona, 2015).

Industrial symbiosis premises for promoting the green economy in Romania

The issue of poor or inefficient resource management was signaled in the previous edition, while the latest EIO Country Profile report on Romania (EIO, 2016) raises the issues of barriers and drivers to circular economy and eco-innovation in Romania, ranking 18th in the Eco-Innovation Scoreboard (Eco-IS) (with a score of 87.1, below the overall EU-28 average score by 13%, see fig.no.1).
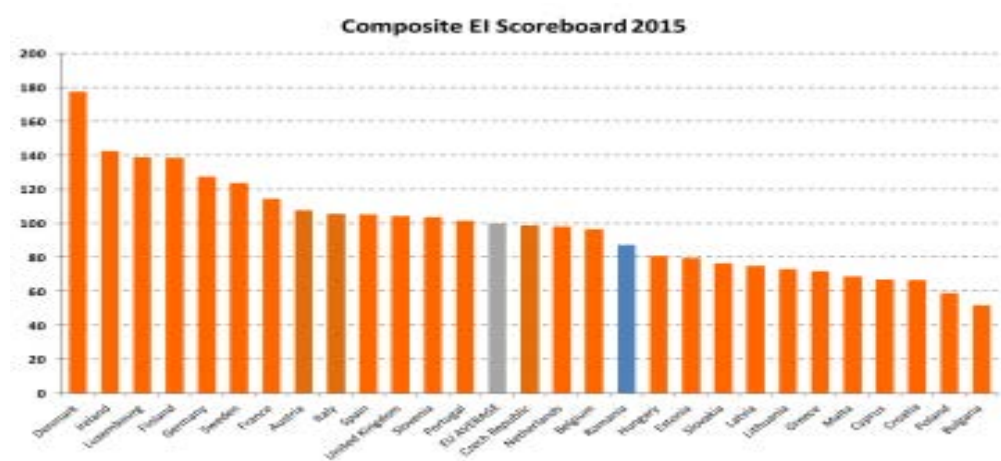
Figure no. 1 EU28 Eco-innovation scoreboard 2015, composite index

Source: EIO, 2015; www.eco-innovation.eu

The best current accomplishment is that Romania ranks above the EU average in terms of eco-innovation activities (38 points above the EU average score of 100).

The eco-innovation designed for an entire area or regional metabolism means a systemic response to the sustainable development and green economic premises. Thus, one of the most important concepts for the new paradigm of green economic growth and resource efficiency improvements is the industrial synergy (industrial ecology, industrial ecosystem) approach.

The main conclusion of (Frone Simona, 2015) was based on a regression model showing that in the 16 European countries of the analyzed sample there is a positive correlation between the number of existing eco-innovation parks (EInvP) and the national level of resource productivity (as macroeconomic indicator of the resource-efficiency).

Important for the current research is the key feature of the eco-innovation park in which material flow exchanges (or industrial symbioses) significantly increase the efficiency of energy, waste and water management, so leading to an almost exponential growth in the local resource-efficiency, for all the clustered companies.

As a case study, we shall analyze here the main features, objectives and outcomes of this pilot Romanian EInvP named Application of Industrial Ecosystems Principles to Regional Development (ECOREG) in Suceava County, according to the official reporting (nisp-ecoreg.ro). ECOREG was a pilot project aimed at testing the applicability of Industrial Symbiosis in Romania at regional scale.

In the paper is analyzed such an industrial synergy working around SC RITMIC SRL (a SME based in Ilisesti, 18 km E from Suceava), presenting the main features, including the environmental and economic drivers and benefits of the industrial symbiosis by adding value by recycling wooden waste.

3. CONCLUSIONS

For the circular economy, eco-innovation is based on centralizing knowledge on material and energy flows as an efficient tool to foster a transition from a linear industrial system to a closed-loop system mimicking biological ecosystems.

The regional eco-innovation park of industrial symbiosis analyzed (ECOREG Project) was promoted by highlighting the potential economic benefits of joining the programme in order to boost the interest of industry. This approach was required in Suceava since the limited availability of economic operators participating in environmental projects, which most of them perceived as time demanding and costly.

The conclusions of the paper reinforce the strategic role of developing eco-innovation parks in Romania, as industrial ecosystems for the manufacturing and service enterprises and the local authorities seeking enhanced environmental and economic performance through closer collaboration in managing environmental and resource issues.

Still a pro-active policy, a coordinated approach and smart public management are strongly required to sustainably develop circular economy in Romania and reap its significant advantages (including preservation of the virgin forests).

REFERENCES

1) ***Adding Value to Wooden Waste (5), ECOREG Project Case Study No 5, 2010EU Council (2006): Renewed EU Sustainable Development Strategy, Council of the European Union, Brussels, 9 June 2006, 10117/06

2) EC COM(2015) 614 final: COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Closing the loop - An EU action plan for the Circular Economy, European Commission, Brussels

3) EC Panorama, 2016: Panorama, No.58 Autumn 2016, European Commission

4) EIO, 2016: Country Profile Romania 2014-2015, Eco-Innovation Observatory, Brussels, 2016

5) Frone S., Constantinescu A. 2015, OBJECTIVES AND TRENDS OF A RESOURCE-EFFICIENT ECONOMY IN EUROPEAN UNION AND IN ROMANIA, Annals of the „Constantin Brâncuşi" University of Târgu Jiu, Economy Series, Special Issue/2015 - Information society and sustainable development, 296-302

6) Frone Simona, 2015: The Eco-Innovation Parks: Vectors Of Transition to A Green Economy, Annals of the „Constantin Brâncuşi" University of Târgu Jiu, Economy Series Special Issue ECO-TREND 2015

7) Frone Simona, 2017: The Role of Eco-Innovation for Promoting a Green Economy, LAP LAMBERT Academic Publishing, Saarbrucken

8) Lombardi, D. R. and Laybourn, P. (2012), Redefining Industrial Symbiosis. Journal of Industrial Ecology, 16: 28–37. doi: 10.1111/j.1530-9290.2011.00444.x

9) Massard, G., 2011. *Les symbioses industrielles: une nouvelle stratégie pour l'amélioration de l'utilisation des ressources matérielles et énergétiques par les activités économiques*, Ph.D. thesis, Université de Lausanne

10) Platon V., Frone S., and Constantinescu A., 2016: Challenges and innovations on the sustainable forest management in Romania; virgin forests as heritage, at the international project conference MIS ECT 2617 ALECTOR *"Caring and Sharing. The Heritage Environment as an Agent for Change"* 31st May-2nd of June 2016, Istanbul

11) Sandu Steliana, 2012: Smart specialization concept and the status of its implementation in Romania, Procedia Economics and Finance 3 (2012) 236 – 242

12) UNEP 2014, *The Business Case for Eco-innovation*, United Nations Environment Programme, 2014

13) UNEP, 2011: *Decoupling natural resource use and environmental impacts from economic growth*. A Report of the Working Group on Decoupling to the International Resource Panel. A United Nations Environment Programme

14) UNEP, 2012. *The Business Case for the Green Economy. Sustainable Return on Investment,* United Nations Environment Programme, 2012

15) UNIDO, 2013: *GREEN GROWTH: FROM LABOUR TO RESOURCE PRODUCTIVITY, Best practice examples, initiatives and policy options*, 2013

WIND ENERGY IN THE EU: HOW DOES ROMANIA FARE?

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Abstract
On a global scale, renewable energy is the world's fastest-growing energy source. The contribution of wind energy, in particular, has increased rapidly over the past decade. The European Union (EU) specifically is a forerunner in the field of wind energy. However, low demand growth for electricity and a difficult economic situation raise doubts about the efficiency of future investments. To many observers outside the electricity industry, wind looks extremely attractive. Yet, despite the apparent "free" nature of the source, wind is still very expensive, primarily due to the high investment costs relative to the electricity generated. The main aim of this paper is to investigate how does Romania's energy sector fare compared to other EU member states, with a focus on wind energy. The analysis reveals a fairly balanced energy mix and a high independence of the country in terms of imports. However, Romania suffers from a weak coordination between the different public bodies, especially in areas such as environmental protection and energy efficiency. There is also a clash of interests between wind energy producers and traditional producers. Based on the results of the analysis of the wind energy sector in Romania, a series of recommendations for policymakers are formulated.

Keywords: *Wind Energy, Renewable Energy, Energy Policy, Romania, European Union*

Classification JEL: *Q42, Q48*

1. INTRODUCTION

On a global scale, renewable energy is the world's fastest-growing energy source. As the US Energy Information Administration (EIA) notes, the contribution of wind energy, in particular, has grown rapidly over the past decade, from 18 GW of net installed capacity at the end of 2000 to 183 GW at the end of 2010, a trend that continues (EIA, 2013).

The European Union (EU) in particular is a forerunner in the field of wind energy. Judging by the total capacity installed by the end of 2013, wind energy covers 8% of the electricity consumed in the EU in a normal year (EWEA, 2014). Rapid expansion of wind power generation has occurred recently, driven by the requirements of the EU's Renewable Energy Directive and national targets. However, low demand growth for electricity and a difficult economic situation raise doubts about the efficiency of future investments.

These developments have sparked several scientific papers in the literature. Among the most recent authors who covered this subject in empirical economic studies are Ho (2016) for Malaysia, Loomis (2016) for the US, Lam (2017) for China and Zamfir (2016) for Romania.

To many observers outside the electricity industry, wind looks extremely attractive. Yet, despite the apparent 'free' nature of the source, wind is still very expensive, primarily due to the high investment cost relative to the electricity generated.

Nevertheless, wind power is extremely important for the EU as it may hedge against energy dependence and fluctuations of fuel and gas prices. Deciding in favour of a stable and independent energy source can be seen as simple but efficient insurance against the volatility of the future energy market (Stiesdal, 2014).

In this context, the aim of this paper is to investigate the following issues: how does Romania's energy sector fare compared to other EU member states? What are the developments made by Romania in the field of wind energy? What are the perspectives of renewable energy in Romania? These matters are approached by means of an analysis of the main reports, statistics and press releases concerning energy policy.

2. THE ROMANIAN ENERGY SECTOR

Romania is characterized by a tradition of cheap access to energy thanks to its existing resources. The country has access to significant volumes of gas, oil, coal, and it also benefits from sizeable hydroelectric resources. The Romanian energy sector provides some specific advantages compared to the majority of EU member states: a fairly balanced energy production mix and rather high energy independence in terms of imports.

However, Romania is a heavy industrial energy consumer (almost triple than the EU average / GDP, according to Eurostat data, 2013). Energy intensity, defined as the ratio of gross inland consumption of energy to GDP, gives an indication of the effectiveness with which energy is being used in a country to produce added value.

Romania suffers also from weak coordination between the different public bodies in the field of energy, especially in the area of environmental protection. Frequent changes in the laws and administrative bodies, with almost yearly restructuring followed by lay-offs, undermined the regulatory capacity of authorities. In order to implement sound competition on the energy market and gain investor trust, it is crucial for the national energy regulating authority to maintain its autonomy and show its competence in the field.

In theory, Romania possesses the main infrastructure to play an important role in the Eastern European electricity market but its development depends on some fundamental energy policy decisions. According to Bianco, three main points need to be addressed:
- Obsolescence of power plants;
- Development of international interconnections;
- Impact of electricity market reform (Bianco and others, 2014).

The Romanian government has to move away from polluting energy plants towards green energy, to replace a significant share of its obsolete coal and gas generation capacities, and to upgrade its outdated energy infrastructure, especially transmission and distribution networks. Transmission in particular will need investment to ensure the secure supply of electricity to consumers, to integrate new capacities and avoid bottlenecks, and to upgrade interconnections with bordering countries so as to ease exports of energy.

Through the development of the wind energy sector, Romania has the chance to generate green electricity with low emissions, and thus meet the requirements of the EU with regard to the production of energy from renewable sources (Tocan, 2014).

In recent years, wind energy increased its share significantly in power production, showing positive signs towards green energy usage. Among EU countries, Romania was a front-runner in installing wind power in 2012, alongside much better established countries in this field (see table no. 1).

Table 1. **Investments in wind turbines in top 10 EU countries in 2012, MW**

Country	Installed power	Total power
Germany	2,440	31,332
United Kingdom	1,897	8,445
Italy	1,273	8,144
Spain	1,122	22,796
Romania	923	1,905
Poland	880	2,497
Sweden	846	3,745
France	404	7,196
Belgium	297	1,375
Austria	296	1,378

Source: EWEA data (2014).

As a confirmation of this positive evolution, Ernst&Young ranked Romania the 10th most attractive country for wind energy on a global level, calling it 'the shining star of renewables in Eastern Europe' (Ernst&Young, 2012).

But, as Duhaneanu and Marin (2013) show, there are still several problems for renewable energy developers in Romania:

- Problems regarding the connection to the network;
- Changes in the market for green certificates.

The clash of interests between wind energy producers and traditional producers related to the priority of fuelling energy into the grid, possibly generating overloads in peak periods and a higher volatility, needs to be settled, for the public good.

The Romanian market for renewable energy gained attractiveness due to a subsidy scheme offered by the government, based on the issuing of green certificates for suppliers. Intended to give a boost to the sector, the aid scheme was eventually cut back in July 2013, when it started imposing costs deemed too high on consumers and was considered overgenerous by authorities. As a consequence, the government decided to delay granting green certificates to investors in wind power plants until 2018.

3. CONCLUSIONS

The analysis included in this paper provides an insightful view of the Romanian energy sector with a focus on wind energy development in recent years.

The dynamic growth in installed wind farm capacity allowed Romania to make progress and get ahead of a number of EU member states.

However, energy prices are expected to increase, fully reflecting production costs as well as the support schemes for renewable energy. By improving energy efficiency, the effect on consumers could be mitigated.

Other critical benchmarks that need to be reached involve:
- Unitary, long-term strategy and clear regulations in the energy sector;
- Stable legislation to favour investment;
- Solid corporate governance in public energy companies.

These benchmarks are highly needed, as Romania is still perceived by investors as a high-risk country. Thus, its enormous energy potential could be wasted by administrative and legal blurriness.

REFERENCES

1.Bianco, V. and others, *An Analysis of the Electricity Sector in Romania*, 9, 2, pp.149-155, 2014.

2.Duhaneanu, M., Marin, F., *Transforming Energy Sector to Sustain Growth: Business Opportunities in Romania's Energy Sector*, International Conference of the Institute for Business Administration, Bucharest, 2013.

3.Energy Information Administration (EIA), *International Energy Outlook*, Washington, 2013.

4.Ernst&Young, *Renewable energy country attractiveness indices,* London, 2012.

5.European Wind Energy Association (EWEA), *Annual Report 2013: Building a stable future*, Brussels, 2014.

6.Eurostat, *EU energy in figures: statistical pocketbook 2013*, DG Economic and Financial Affairs, European Commission, Brussels, 2013.

7.Ho, L.-W., *Wind energy in Malaysia: Past, present and future*, Renewable and Sustainable Energy Reviews, 53, C, pp.279-295, 2016.

8.Lam, L. and others, *Against the Wind: China's Struggle to Integrate Wind Energy into Its National Grid*, Peterson Institute for International Economics, Washington, 2017.

9.Loomis, D. and others, *Economic Impact of Wind Energy Development in Illinois*, Journal of Business Valuation and Economic Loss Analysis, 11, 1, pp.3-23, 2016.

10.Stiesdal, H., *Redefining the cost debate–the concept of society's cost of electricity*, Global Wind Report: Annual Market Update 2013. Global Wind Energy Council, Brussels, 2014.

11.Tocan, M., *Wind Energy Sector in Romania–Present and Perspectives*, Ecoforum 3, 1, pp.33-38, 2014.

12.Zamfir, A. and others, *Public policies to support the development of renewable energy in Romania: A review*, Renewable and Sustainable Energy Reviews, 58, C, pp.87-106, 2016.

CONSUMERS' PERCEPTIONS OF ORGANIC FOOD

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Abstract

The present study is based on the premises that consumers are influenced by people around them, among which other consumers represent a significant influential group and that the understanding of what consumers believe about other consumers can improve marketers' communication with the first group. The objective of the paper was to investigate how consumers perceive others motivations to eat organic food. Investigated motivations were the characteristics of being healthier, of having better taste, curiosity as a purchase driver, and consumption as creator of prestige. Results showed that the majority of people (76.3%) considered that the belief that organic food was healthier than the conventional one had a strong or very strong power to motivate other people's consumption. At the same time, organic food taste was perceived as a weaker driver for organic food consumption compared to the benefits for health. The findings of the study can be used in promotional campaigns that aim to increase organic food consumption, which will be beneficial not only to producers, but also to consumers and the environment, thus supporting a more sustainable production-consumption pattern.

Keywords: perception, reference group, other consumers' motivations, organic food, health benefits

Classification JEL: D12, M31, Q01, Q56

1. INTRODUCTION

Interest in sustainable development has increased during the last three decades in all fields – agriculture, technical, legal, etc. – due to the continuous degradation of the environment. Along with a shift in the way of thinking, consumption and production are, probably, the areas where changes towards sustainable patterns are the most necessary. Sustainable consumption was defined at The Oslo Rountable on Sustainable Production and Consumption in 1994 as "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations" (***, 1994). Organic food is a category of goods that respond well to the requirements of Oslo definition mainly due to their lower negative environmental impact compared to conventional food. Thus, the study of organic food consumer behavior represents a contribution to the efforts of creating a sustainable society.

The objective of this study was to reveal consumers' perception about organic food consumers' motivations to eat this type of food. In was about how people perceive others' motivations and not about the motivations of the interviewed persons. The research questions were: "How do people perceive the strength of organic food being healthier than the conventional one as motivation of organic food consumers to buy organic food?", "How do people perceive the strength of taste as motivation of organic food consumers to buy organic food?", "How do people perceive the strength of curiosity as motivation of

organic food consumers to buy organic food?", and "How do people perceive the strength of prestige as motivation food of organic food consumers to buy organic?". Answer options were "very low", "low", "average", "high", and "very high". The results were obtained through a non-probabilistic survey based on a convenience sample of 80 persons from urban areas from several Romanian cities. The questionnaire contained four Likert type questions and was applied face to face and online.

2. RESULTS AND DISCUSSIONS

Consumer behavior is influenced by a variety of factors, among which one is represented by the reference groups (Hawkins and Mothersbaugh, 2015). Reference groups include associative groups (include people who represent the individuals' current equals or near-equals are included here), aspiration groups (comprise people consumers would like to be like), and dissociative groups (represent people that the individual would not like to be like). Other consumers may form such a reference group. Therefore, their motivations can influence consumer's choice. The motivations of the group (formed by other consumers, in this case) may be adopted or rejected by the studied consumer depending on the nature of the group (associative, aspirational or dissociative). In this context, what other consumers' think, and in particular, their consumption motivations are one piece of the puzzle that can help in understanding organic food consumer behavior.

Consumers' buying motivations were frequently investigated in relation to organic food and health concerns and taste were among the most common and powerful reasons that were observed to drive people toward organics (Bourn and Prescott, 2002; Hughner and others, 2007; Tobler and others, 2011; Zanoli and Naspetti 2002). Besides these two, other motivations were also reported to stimulate the consumption of organic food, such as environmental concerns, social considerations, lack of confidence in the conventional food industry, nutritional content, product availability, regional production and others (Bourn and Prescott, 2002; Escobar-López and others, 2017; Hughner and others, 2007; Zander and Hamm, 2010). For the present study, the most important motivations – health attributes and taste – were selected for investigation plus two other: curiosity and prestige. Curiosity was included in the list because organic food was relatively new on the market and, therefore, curiosity could be a reason for consumption. Prestige, understood as product capacity to indicate a social status higher than the average, was selected because of the high price that was usually attached to organic food. Thus, the characteristics of being healthier, of having better taste, curiosity as a purchase driver, and consumption as creator of prestige were studied as other people's motivations to consume organic food.

Results indicated that all tested motivations had high strength to push people towards organics (Figure 1), with scores above the average level (2.5). Previous studies draw attention on the fact the low level on organic food consumption compared to the conventional one is partially determined by lack of knowledge and often by uncertainty about the its characteristics (Aertsens and others, 2011). Communicating to consumers characteristics of organic food has the potential power to stimulate consumption. Such a piece of information can be what people from their reference groups (including opinion leaders) think about organic food, in particular, what motivated them to buy organic food.
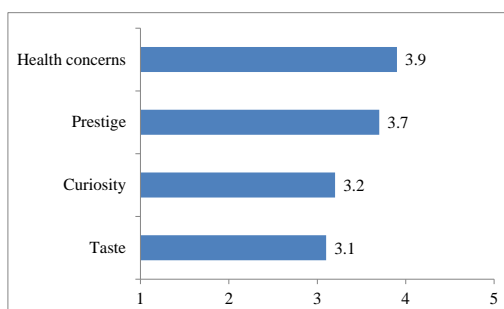
Figure 1. Perceived average strength of health attributes, taste, curiosity, and prestige as other consumers' motivations to buy organic food (average scores)
Source: Author's elaboration based on survey data

Among the four tested motivations, the dominant one was the quality of being healthier than conventional food, which was perceived by more than three quarters of tested people as strong or very strong motivation of other consumers to buy organic food (Table 1). This finding is in line with the ones carried out on other populations, which showed that related motivations concerning health, which express the general value of "security", is the strongest argument for purchasing organic food (Aertsens and others, 2011).

Table 1. Percentage of people that perceive a certain degree of strength of each motivation to drive other consumers to buy organic food

Motivation / Strength of motivation	Very low	Low	Average	High	Very high
Health	8.8%	2.5%	12.5%	41.3%	35%
Taste	13.8%	11.3%	33.8%	30%	11.3%
Curiosity	10%	11.3%	27.5%	47.5%	3.8%
Prestige	8.8%	3.8%	17.5%	48.8%	21.3%

Source: Author's elaboration based on survey data

The power of other people motivations to influence someone's behavior depends on the propensity of that person to comply with what other people (relevant to him/her) think (Ajzen, 1991; Ajzen , 2006). Future studies can add to the variables analyzed here information about the influence power that specific reference groups have on consumers and about their own motivations to buy organic food.

3. CONCLUSIONS

This study reported what people thought about other people's motivations to eat organic food, thus casting light on a part of organic food image in their minds. Results indicated that organic food was perceived as a product that was consumed in the first place because it was considered to be healthier than conventional food and because of the status it communicated. Moreover, all tested variables obtained high scores, so it could be concluded that they were all considered by tested people as playing an important role in the other consumers' decision to purchase organic food. In the situation when other consumers represent an associative or aspirational group for the target group of a communication

marketing activity, the target group can be positively influenced to buy organic food if it is informed about the motivations of its associative or aspirational group.

Consumers' motivations and perceptions are two important components of the organic food consumer behavior. Their investigation bring benefits from at least two perspectives: for those interested in the market opportunities offered by this category of products and for those concerned with protecting the environment. Thus, one step ahead towards sustainable development can be made by revealing more information about organic food consumers and consumption.

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REFERENCES

1.Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., Van Huylenbroeck, G., 2011, *The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food*, British Food Journal, 113(11):1353-1378.

2.Ajzen, I., 1991, *The theory of planned behavior*, Organizational Behavior and Human Decision Processes, 50:179-211.

3.Ajzen, I., 2006, *Theory of planned behaviou*, Icek Ajzen – homepage, available at: http://people.umass.edu/aizen/tpb.html.

4.Bourn, D., Prescott, J., 2002, *A Comparison of the Nutritional Value, Sensory Qualities and Eood Safety of Organically and Conventionally Produced Foods*, Critical Reviews in Food Science and Nutrition, 42(1):1–34.

5.Escobar-López, S. Y., Espinoza-Ortega, A., Vizcarra-Bordi, I., Thomé-Ortiz, H., 2017, *The consumer of food products in organic markets of central Mexico*, British Food Journal, 119(3):558-574, doi: 10.1108/BFJ-07-2016-0321.

6.Hawkins, D., Mothersbaugh, D., 2015, *Consumer Behavior: Building Marketing Strategy* (Irwin Marketing), 13th Edition, McGraw-Hill Education, New York.

7.Hughner, R. S., McDonagh, P., Prothero, A., Shultz II, C. J., Stanton, J., 2007, *Who Are Organic Food Consumers? A Compilation and Review of Why People Purchase Organic Food*, Journal of Consumer Behaviour, 6(2):94–110.

8.Tobler, C.,.Visschers, V.H.M., Siegrist, M., 2011, *Eating Green. Consumers's Willingness to Adopt Ecological Food Consumption Behaviours*, Appetite, 57(3):674–82.

9.Zander, K., Hamm, U., 2010, *Consumer preferences for additional ethical attributes of organic food*, Food Quality and Preference, 21(5):495–503.

10.Zanoli, R., Naspetti, S., 2002, *Consumer Motivations in the Purchase of Organic Food: A Means-End Approach*, British Food Journal, 104(8):643–53.

11.***, 1994, *Oslo Rountable on Sustainable Production and Consumption*, available at http://enb.iisd.org/consume/oslo000.html.

SUSTAINABLE BUSINESS DEVELOPMENT
BY SUSTAINABLE TECHNOPRENEURSHIP

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Abstract

The purpose of this paper is to launch a discussion on a few concepts related to business and entrepreneurship, in the framework of sustainability: (i) to introduce the notion of technopreneurship as a merging point and interdisciplinary area of interest of entrepreneurship, technology, and innovation; (ii) to notice that current "sustainable development" debates already integrated the business area, so the "sustainable business development" concept was born; and, in this context, (iii) to highlight significant changes in contemporary business environment – namely from the profitable business to the sustainable business; from profitable entrepreneurship to sustainable entrepreneurship; and from profitable technopreneurship to sustainable technopreneurship.

The paper also initiates a provocative discussion on even newer concepts as technowledge (technology knowledge) and, therefore, technowledgepreneurship (technology knowledge entrepreneurship).

Mostly conceptual, based on significant literature survey, the paper explores the entrepreneurship bordering areas, in the larger framework of sustainable development, and the discussion provoked by this paper may be important for scholars and entrepreneurs alike.

Keywords: *Sustainable business development, Entrepreneurship, Technopreneurship, Technowledge, Sustainable technopreneurship*

Classification JEL: *Q55 - Technological Innovation; Q56 - Environment and Development; Environment and Trade; Sustainability; L26 - Entrepreneurship*

1. INTRODUCTION

According to Joseph Schumpeter, carrying out innovations is fundamental in history: he made a case that *innovation and technological change come from entrepreneurs* (Schumpeter, 1947). The Schumpeter's theory on entrepreneurship and his view that entrepreneurship is actually innovation was emphasized in several studies (Ohyama and others, 2009; Śledzik, 2013). Peter Drucker also reckons the organic link between innovation and entrepreneurship (Drucker, 1985).

The purpose of this paper is to propose the concept of *technopreneurship* and examine – in paralel to the conceptual evolution of entrepreneurship to technopreneurship, under new technologies development – the impact of sustainability science development on both of them.

2. TECHNOPRENEURSHIP AND NEW AVENUES IN ENTREPRENEURIAL STUDIES

Scholars agree on the intimate interdependence between entrepreneurship, innovation, and technology. As result, corresponding studies are carried out and specialized journals publish them. However, it is noteworthy that several journals are focused on interdisciplinary areas, two by two: entrepreneurship and innovation; innovation and technology; technology and entrepreneurship – which demonstrates the high level of interest among theorists and practitioners equally, both authorship and readership. In addition, new words are enriching the vocabulary – as even the names of some journals display (Technovation = Technology and Innovation; Technoentrepreneurship = Technology and Entrepreneurship).

Consequently, it makes sense to call **Technopreneurship** the common zone of inter-disciplinarity between all three area of interest: technology, entrepreneurship, and innovation – not only the technology–entrepreneurship zone (Scarlat, 2014).

An interesting theory stream is intellectual entrepreneurship (Cherwitz and Sullivan, 2002; Cherwitz, 2005a, 2005b) which has made Hildebrand (2005) to state that "Academics are intellectual entrepreneurs". It is not our goal to argue on this issue; however, unmistakably, intellectual activities and capacity neatly play a significant role in contemporary knowledge economy and knowledge society. Accepting that technowledge is an appropriate term for technology knowledge, then managing this particular type of knowledge as well as knowledge-based [new] technology businesses is a particular type of management – technowledge management.

Therefore, **Technowledgepreneurship** might be a suitable term for **technowledge entrepreneurship** (Scarlat, 2014).

3. THE IMPACT OF SUSTAINABILITY SCIENCE ON ENTREPRENEURSHIP AND BUSINESS STUDIES

The advancement of the firm's theory from maximizing the shareholders' value to the triad's theory – satisfying not only business owners but also its employees and clients (Kelada, 2010) – has continued to a more complex model (which includes all business stakeholders and social actors – that has led to modern concept of *corporate social responsibility*). Thus, economists and business theorists acknowledged that businesses operate in an economic environment as well as in a social environment. As consequence, the business development goal becomes *equitable development*.

The conflict between business development and the eco-environment became more visible as new technologies emerged, have developed, and adopted; and, with them, terrible accidents, catastrophic damages, sometimes irreparable, occur (amid significant compensations for victims). To cite just an example, in case of Deepwater Horizon disaster in the Gulf of Mexico (April 2010), the largest offshore oil spill in US history, British Petroleum has paid out billions of US dollars in compensation claims (Crooks, 2017). The attention paid to sustainability issues is officially becoming a real movement, with its

supporters and critics, which caught the politics and public interest, starting with Al Gore's "Remarks" at *Climate Change Conference* in Kyoto, Japan, back in 1997.

However, the economists' attention paid to sustainable development is considered even older, traceable almost two decades before, when French economist René Passet proposed that sustainable development should consider not only the economic environment but also social and ecological environments (Passet, 1979). There are areas of *viable development* (at the intersection of economic and ecological environments *i.e.* a business might be sustainable economically but is not viable if the eco-environment does not allow it to develop) as well as *bearable development* (at the intersection of social environment and eco-environment). This "triple bottom line" (Elkington, 1997) is currently a framework to assess the value of businesses. It is also considered – as a comprehensive approach "from people to nature" – in the annual *Global Sustainable Reports* of the United Nations Organization since 2014 (UN, 2014). Other theorists (Scerri and James, 2010; James and others, 2015) added the fourth dimension: the cultural one, which is used in UN statistics as well ("circles of sustainability").

The so-much debated issues of the destruction of critical habitats (as rain and temperate forests, wetlands, coral reefs, as well as climate change and global warming (Gore, 1997), efficient use of natural resources (Ren and others, 2017), increasing demand for "clean" energy, fight with pollutants, mostly heavy metals (Gupta and Arya, 2016) and carbon dioxide emissions – acute in mainland China mainly (Zhang and Wang, 2016; Wu and He, 2017), research efforts to develop innovative eco-friendly products, and alike – are all related to (if not the direct result of) innovative technologies.

And things do not stop here – as recent facts, popular discontent generated by inequality, in the context of explosive development of new technologies (not rarely in conflict with the traditional values and sustainable development), raise serious questions about development strategies: "how growth became the enemy of prosperity" (Rushkoff, 2016). As result, well-aware of the critical importance of the sustainable development of the business (entrepreneurship included), not only companies but even developed states are currently adopting national initiatives to address the environment issues.

Just two examples at the company level: under the pressure of environmentalist organizations, yet sensitive to their clients' needs, many companies are genuinely aligned to the environmental issues, publishing their *Environmental Profit and Loss* statement (EP&L) and appointing a Chief Sustainability Officer (CSO).

At governmental level, two other examples are offered.The American state of California "has adopted the most aggressive program in the U.S. to fight climate change, a campaign to roll back carbon emissions 40 percent below 1990 levels by 2030. The measures include escalating fees charged to polluters …, incentives for electric cars, and regulation of greenhouse gas releases from dairy cows and landfills" (Williams, 2017). In Great Britain, a national initiative aims "to identify companies that pose the biggest climate change risk. The project comes on the back of growing investor concern about companies failing to take carbon emissions seriously" (Rutter Pooley, 2017). As result of this initiative, the companies will be ranked by two criteria: how managers deal with climate change risks and how effectively they acted as far as carbon reduction.

Joint efforts and collaboration between academia and business community is solid base for dealing with sustainability issues. "The complexity of sustainable development and societal transitions require both analytical understandings of how coupled human-

environment systems function and transdisciplinary science-to-practice approaches"
(Luthe, 2017, p.1).

Reckoning the complexity of studies on sustainability science, Stock and Burton
(2011) "examine the distinctions between three categories (multidisciplinary,
interdisciplinary and transdisciplinary) of integrated research and offer reflections on how
sustainability researchers can categorize their research to improve common
understandings". This paper contributes at completing the understanding of importance of
sustainable development from entrepreneurship and business development standpoint
(table no.1): the impact of sustainability science development on entrepreneurship and
business is significant – not just in defining the concepts but in their meaning as well.

Table no. 1: Evolution of entrepreneurship concepts and impact of sustainability

Evolution of the entrepreneurship concepts	Impact of sustainability science development	
	Traditional development	**Sustainable development**
Business	[profitable] business development	sustainable [business] development
Entrepreneurship	[profitable] entrepreneurship	sustainable entrepreneurship
Technopreneurship	[profitable] technopreneurship	sustainable technopreneurship
Technowledgepreneurship	[profitable] technowledgepreneurship	sustainable technowledgepreneurship

4. CONCLUSIONS AND IMPLICATIONS

This paper proposes several concepts related to entrepreneurship and new
technologies unparalleled development (as technopreneurship, technowledge,
technowledgepreneurship). Mostly conceptual, as result of significant literature survey, the
paper explores the entrepreneurship bordering areas, in the larger framework of sustainable
development, and the discussion provoked may be important for scholars and technology
entrepreneurs alike.

Besides the theoretical value of the concepts proposed, it is important to understand
that new ventures are at disadvantage. While large companies hire chief sustainable
officers, have the potential to develop longer term strategies for sustainable development,
and provide substantial reserve funds to eventually cover the cost of damages of billions in
case of occurring environment accidents, entrepreneurial start-ups are ways away.

As the entrepreneurial activities are becoming increasingly technology- and
knowledge-based, the discussions on entrepreneurship should be actually about
technopreneurship and *technowledgepreneurship*. This is not only of conceptual
importance but an important issue from risk management standpoint – for at least two
reasons:

(i) new technology companies require larger investments and, consequently, larger
amounts of money are at higher risk;

(ii) as new ventures are, by definition, risky – new technology ventures are even riskier. This is why *solid background of concepts is the premise for proper risk analysis, successful risk management, and, by consequence, successful businesses.*

REFERENCES

1. Cherwitz, R. *Intellectual entrepreneurship: The new social compact.* Inside Higher Education, March 9, 2005a.
2. Cherwitz, R. *Creating a Culture of Intellectual Entrepreneurship.* Academe, 91(5), 2005b.
3. Cherwitz, R., Sullivan, C.A. *Intellectual entrepreneurship: A vision for graduate education.* Change, 24(2), 2002, pp.22-27.
4. Crooks, E. *BP's Deepwater Horizon ol spill lands 102 people in jail for fraudulent claims.* Financial Times (Middle East), Monday, 16 January 2017, p.1.
5. Drucker, P. *Innovation and Entrepreneurship.* Heinemann, 1985.
6. Elkington, J. *Cannibals with forks – The triple bottom line of the 21st century.* Capstone Publishing Ltd., Oxford, 1997.
7. Gore, Al. *Remarks.* Climate Change Conference, Kyoto, Japan, December 8, 1997. Available at: http://www.algore.com/speeches_kyoto_120897.html
8. Gupta,V. and Arya, A.K. *Demonstrating urban pollution using heavy metals in road dusts from Luknow City, Uttar Pradesh, India.* Environment Conservation Journal, 17(1&2), 2016, pp.137-146.
9. Hildebrand, D.L. *Academics Are Intellectual Entrepreneurs.* Spring 2005 peerReview. Association of American Colleges and Universities – AACU, 2005, pp.30-31.
10. James, P. with Magee, L. Scerri, A., Steger, M.B. *Urban Sustainability in Theory and Practice: Circles of Sustainability.* Routledge, London, 2015.
11. Kelada, J. *Integrating Reengineering with Total Quality.* New Age International Publisher, 2010.
12. Luthe, T. *Success in Transdisciplinary Sustainability Research.* Sustainability, 9(1), 2017, pp.1-24.
13. Ohyama, A., Braguinsky, S., Klepper, S. *Schumpeterian entrepreneurship.* DRUID Summer Conference, Copenhagen Business School, June 17-19, 2009.
14. Passet, R. *L'Économique et le vivant.* Payot, Paris, 1979. Deuxième édition, Economica, Paris, 1996.
15. Ren, C., Li, R. and Guo, P. *Two-Stage DEA Analysis of Water Resource Use Efficiency.* Sustainability, 9(1), 2017, p.52.
16. Rushkoff, D. *Throwing rocks at the Google bus: How growth became the enemy of prosperity.* Portfolio/Penguin Random House, New York, 2016.
17. Rutter Pooley, C. *Church of England launches climate ranking.* Financial Times, Financial Markets section, Monday, 16 January 2017, p.3.
18. Scarlat, C. *Technopreneurship: An emerging concept.* FAIMA Business & Management Journal, Volume 2, Issue 3, September 2014: "Entrepreneurship and Technology", pp.5-13.

19. Scerri, A., James, P. *Accounting for sustainability: Combining qualitative and quantitative research in developing 'indicators' of sustainability*. International Journal of Social Research Methodology, 13(1), 2010, pp.41-53.

20. Schumpeter, J.A. *The Creative Response in Economic History*. Journal of Economic History, Vol.7, 1947, pp.149-159.

21. Śledzik, K. *Schumpeter's View on Innovation and Entrepreneurship*. In "Management Trends in Theory and Practice" (Editor: Hittmar Stefan), University of Zilina & Institute of Management by University of Zilina, 2013.

22. Stock, P., Burton, R.J.F. *Defining Terms for Integrated (Multi-Inter-Trans-Disciplinary) Sustainability Research*. Sustainability, 3(8), 2011, pp.1090–1113.

23. United Nations. *Prototype Global Sustainable Development Report* (online unedited ed.). United Nations Department of Economic and Social Affairs, Division for Sustainable Development, New York, 2014. Available at: http://sustainabledevelopment.un.org/index.php?menu=1621 Accessed on December 2, 2016.

24. Williams, J. *California governor defiant in face of Trump agenda*. YahooNews. Associated Press, January 24, 2017. Available at: https://www.yahoo.com/news/california-governors-speech-comes-amid-shifting-politics-050631988--politics.html Accessed on January 24, 2017.

25. Wu, J.-X. and He, L.-Y. *The Distribution Dynamics of Carbon Dioxide Emissions Intensity across Chinese Provinces: A Weighted Approach*. Sustainability, 9(1), 2017, p.101.

26. Zhang, N. and Wang, B. *Toward a Sustainable Low-Carbon China: A Review of the Special Issue of "Energy Economics and Management"*. Sustainability, 8(8), 2016, p.823.

NEW NATIONAL PLAN OF DEVELOPMENT OF "GREEN" ECONOMY PRINCIPLES IN BELARUS

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Abstract
The economic policy of the Republic of Belarus pays a special attention to the "green" economy principles. These principles are included in the 2016-2020 Programme of social and economic development of the country and in the National plan of action. The development of "green" economy will be directed at the solution of environmental problems, ensuring the economic safety and social stability, the molding of additional conditions for sustainable economic growth. The main obstacles for sustainable economic growth are singled out, i.e. the threat of the natural resource depletion, the decline in the quality of the environment. The paper provides an assessment of effectiveness and efficiency of "green" economy on the basis of the criteria of compliance.

Key words: "green" economy principles, compliance, plan, development

Classification JEL: Q580

1. INTRODUCTION

In recent years, various aspects of "green" economy principles are touched upon by international organizations such as the UN (2016), UNEP (2016), Partnership for action on "green" economy principles (PAGE 2016).

The Concepts of the Strategy of Sustainable Development of the Republic of Belarus were adopted in 1997 (NSSD 1997), 2004 (NSSD 2020) and 2014 (NSSD 2030). These Concepts were aimed at the conservation and management of natural resources and environment, introduction of modern, environmentally sound technologies into the national economy.

The current stage is focused on further implementation of the "green" economy principles in the economic policy of the Republic of Belarus. This is evidenced by the inclusion of these principles into the development of the "National Action Plan for the development of "green" economy in the Republic of Belarus until 2020" (Plan 2020).

2. "GREEN" ECONOMY PRINCIPLES IN BELARUS: NORMATIVE ASPECT

The main tasks of state environmental policy of Belarus are to create conditions for sustainable use of natural resources and implement the means of the green transformation of the economy.

The Programme (2020) defines priority directions of "green" economy principles' development in the Republic of Belarus as:

• Creation of conditions and corresponding infrastructure for the development of green transport;

• Stimulation of production of ecologically clean agricultural products, organic farming;

• Advancement of sustainable production and consumption, including development of environmental certification, implementation of ecological labeling, preference in supporting and stimulation of green state purchases, creation of green jobs in the regions, realization of eco-innovations;

• Studying the possibilities of introducing financial instruments for the support of "green" economy principles (green obligations, bank project financing, creation of bank of green investment and so on).

The National plan (2020) regards "green" economy principles as a strategic priority. In accordance with the plan the development of "green" economy principles will be directed to the solution of environmental problems, economic security and social stability, as well as the formation of additional conditions for the resumption of sustainable economic growth.

The priority directions of development of "green" economy principles in the Republic of Belarus are:

• The development of electric transport (infrastructure) and urban mobility;

• Implementation of the concept of "smart" cities;

• The development of energy-efficient construction of residential buildings and improving the energy efficiency of the housing stock;

• Reduction of power intensity of the gross domestic product, increasing energy efficiency;

• Enhancing the capacity of renewable energy;

• Creation of conditions for the production of organic products;

• Sustainable consumption and production;

• Development of ecological tourism.

3. "GREEN" ECONOMY PRINCIPLES IN BELARUS: OBSTACLES

In 2016 the Republic of Belarus has improved its position in the ranking of Environmental Performance Index, rising from 43 in 2008 to 35, but it went down 3 points compared to 2014 (EPI 2016).

"Ecological footprint" of Belarus decreased from 5.27 global hectares per person in 2000 to 3.3 hectares in 2006, but then it increased to 3.99 hectares in 2012. The ability of

nature to restore resources has increased over the years 2001-2012 from 3.08 to 3.4 global hectares per person.

The difference between resource use and the environment's ability to heal itself, though only slightly, but is still growing, despite the strengthening of the tendency to restore resources in Belarus (NSSD 2030).

4. CONCLUSION

The above analysis shows that the Republic of Belarus pays a lot of attention to the development of "green" economy principles at the normative level. This is evidenced by the developed Programmes and technical implementation of projects. The Programme of social and economic development of the Republic of Belarus for 2016-2020. (Programme 2020) and the National Action Plan for the development of the «green" economy principles in the Republic of Belarus until 2020 (Plan 2020) define the "green" economy principles as a strategic priority.

Unfortunately, the National Plan does not reflect the indicators characterizing the "green" economy principles, such as the reduction of industrial and municipal waste, the increased sustainability of production and consumption, the evaluation and development of ecosystem services, and the conservation of biodiversity.

REFERENCES

1. EPI (2016) Hsu, A. et al. 2016 Environmental Performance Index. New Haven, CT: Yale University. Available: www.epi.yale.edu (last access 15.03.2017)

2. NSSD (1997) Concept of the Strategy of Sustainable Development of the Republic of Belarus. Minsk. 2016 (in Russian)

3. NSSD (2020) National Strategy of the Republic of Belarus for Sustainable Development for the period until 2020. Minsk, Unipac, 2004 (in Russian)

4. NSSD (2030) National Strategy for Sustainable Socio-Economic Development of the Republic of Belarus for the period up to 2030. Minsk, 2015 (in Russian)

5. PAGE (2016), PAGE Annual Report 2015. Available: http://www.un-page.org/files/public/page_annual_report_2015_web_4.pdf (last access 15.03.2017)

6. Plan (2020) National Action Plan for the Development of a Green Economy in the Republic of Belarus until 2020. Available: http://www.government.by/ru/content/6910 (in Russian) (last access 15.03.2017)

7. Programme (2020) The Programme of socio-economic development of Belarus for 2016-2020. The National Legal Internet Portal of the Republic of Belarus, 27.12.2016, 1/16792 (In Russian)

8. UN (2016), Global Sustainable Development Report 2016. Department of Economic and Social Affairs, New York, July.

9. UNEP (2016). UNEP Frontiers 2016 Report: Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi.

EXPERIMENTAL RESEARCH ON THE PERFORMANCE OF ANTIPOLLUTION MATERIALS, TECHNOLOGIES AND SYSTEMS WITH THE SCOPE OF PROTECTING THE ENVIRONMENT

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Abstract
Environmental quality is certainly a worldwide concern. Air pollution knows no boundaries, and reducing it is of the utmost importance. The use of the right catalyst system converts pollutants to non-pollutants at low-energy requirements and at higher rates, resulting in cost-effective pollution control. The utilization of catalysts for future pollution abatement applications promises to grow at a strong pace over the next decade.

Key words: environmental, pollution, quality

1.INTRODUCTION

Permanent or accidental pollution stimulate scientific research to develop clean complementary technologies. Air quality is characterized by the quantity of material contaminated air coming from the environment, in limited amounts. Air pollutants naturally change the composition of atmosphere and they are to be found as gases or solids. A major difference is represented by the substances which have different periods of existence in atmosphere.

Global components such as carbon dioxide, methane, halogenated hydrocarbons and sodium oxide remain in the atmosphere as long as tens or hundreds of years and they are mixed and homogeneously distributed in the atmosphere. Therefore, only a few measuring stations on the ground are necessary to determine the average concentration of these gases in the troposphere. Taking into account that the level of pollution in some countries is increasing and the number of vehicles increases exponentially it is necessary to continue research on the use and improvement of monolithic supports impregnated with rare materials such as platinum Pt, Rh Rhodium and others.

2. THE CHARACTERISTICS OF THE MONOLITHIC CERAMIC SUPPORT

A particular problem in reducing hydrocarbon emissions is to improve the heating characteristics of the catalyst during the cold start of engines. In the end, we obtained the reduction of the weight degree of heat ceramic substances.

Monolithic ceramic brackets have played an important role in the successful application of technology for purifying exhaust and emission control in auto technology. They were created to withstand the special conditions present in engine exhaust. There

have been several worldwide attemps of industrial achievement through various technologies, of monolithic ceramic supports, such as: American Lava Corporation technology, the manufacture of the ceramic monolith consists in starting from a blank having cellulose as filling material a fine-grained ceramic composition (practically paper impregnated with ceramic) honeycomb. The structure is obtained by alternate arrangement of the embossed sheets of wet paper. The honeycomb structure thus formed is subjected to drying and combustion. During combustion, the cellulose fiber burns leaving a reinforced ceramic structure with the same shape as the original piece.

This company found that the cordierite composition had the best physicochemical properties for the substrate. After the combustion of the cellulose from the fiber monolith honeycomb, the structure of the wall remained porous, ensuring a very good adhesion of the second and subsequent catalyst support.

Experimental Results and Raw Mineral Materials for Obtaining Auxiliary.

Obtaining ceramic catalytic support properties is possible only by choosing suitable raw mineral materials, which quality conditions (in percentage content of the active components, chemical composition, mineralogy, granulometry, humidity reactivity and raw materials) will meet the required final properties of the finished product. The ceramic material most commonly used to manufacture monolithic ceramic is cordierit, an aluminum-magnesium silicate. In order to obtain a material that will satisfy the required physico-chemical conditions, the crystallinity and resistance to thermal shock imposed by the General Motors, the company is interested in purchasing industrial monolithic ceramic technology manufactured by the author. The materials selection criteria were the following: chemical and mineralogical composition of raw materials; impurities content in percentage and particle size.

Experimental Performance Results on Catalytic Systems Pollutant

The fabrication technology of the fencing monolithic ceramic comprises the following steps: manufacture of ceramic paste extrusion rheological; the actual extrusion; drying of extruded blank; burning blank carving and getting cordieritic monolithic ceramic substrate. Pulp ceramic phase behavior is shown in the figure below.
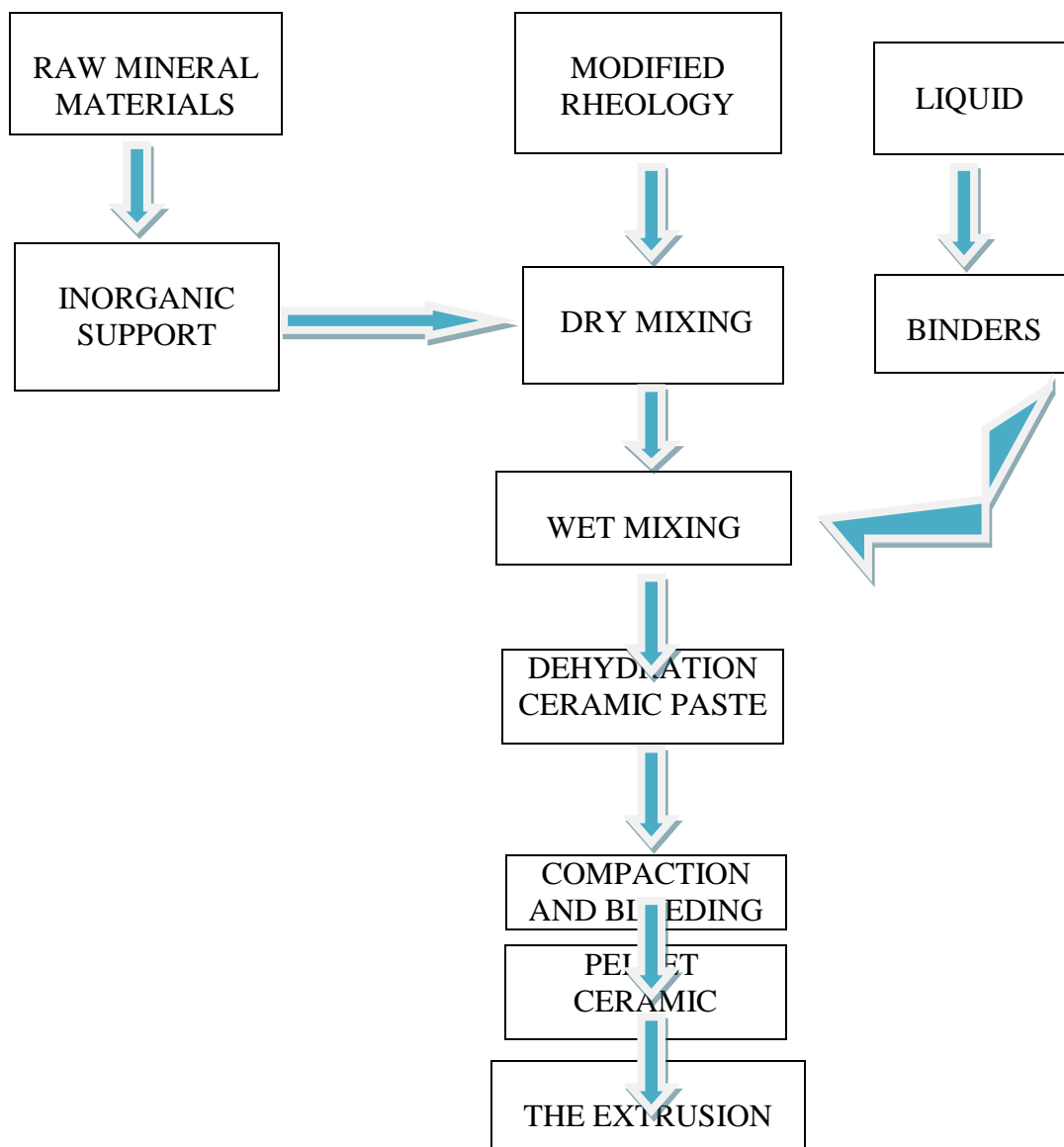
Fig.1. Block diagram of preparation of ceramic granules extrude rheological

Preparation of the ceramic paste can be made by wet or dry. We chose the wet technology, because the phases are much more intimately mixed, the prepared paste has much more reactivity than that obtained by the dry process. If the wet, mixing ratio in the solid and liquid is 3:1. the suspension obtained (slips) after mixing, is filtered through metal screens to remove mechanical impurities.

Dehydration is the procedure that removes water that is in barbotine. Separation of water is done mechanically, by filtration through a filter press under pressure (6-10 atm). The filtered mass produced as a ceramic cake obtained contains up to 20% water. Blank filtrate is then transferred into a shredding machine in order to achieve compaction and wet ceramic granules, rheological extrude. Before extrusion, the wet ceramic granules is matured for 24 hours for better mixing of the components (migration binders and rheological modifier, uniformly throughout the mass).

Extrusion of Ceramic Paste

As mentioned above, extrusion is a method of plastic deformation. It only applies in objects with constant transversal support and is best applicable to objects with high symetry. Extrusion is produced by applying pressure; extrusion equipment exists in two basic types: reciprocating and screw. For the extrusion of wet ceramic granules, piston extrusion technology has been chosen. The advantages of this procedure were previously presented. While the material which is to be extruded moves in the extruder cylinder and in pathway, one may determine the degree of pressures. The pressure drop has three distinct components. Entry pressure drop, ΔP input entry which reflects the mechanical work necessary to deform the material from the cylinder diameter to chain diameter.

$\triangle$ P pathway, reflects the mechanical work necessary to overcome the friction force which appears at the slip of material through the chain section.

$\triangle$ P out, reflecting the reduction in pressure at the material's exit out of the chain.
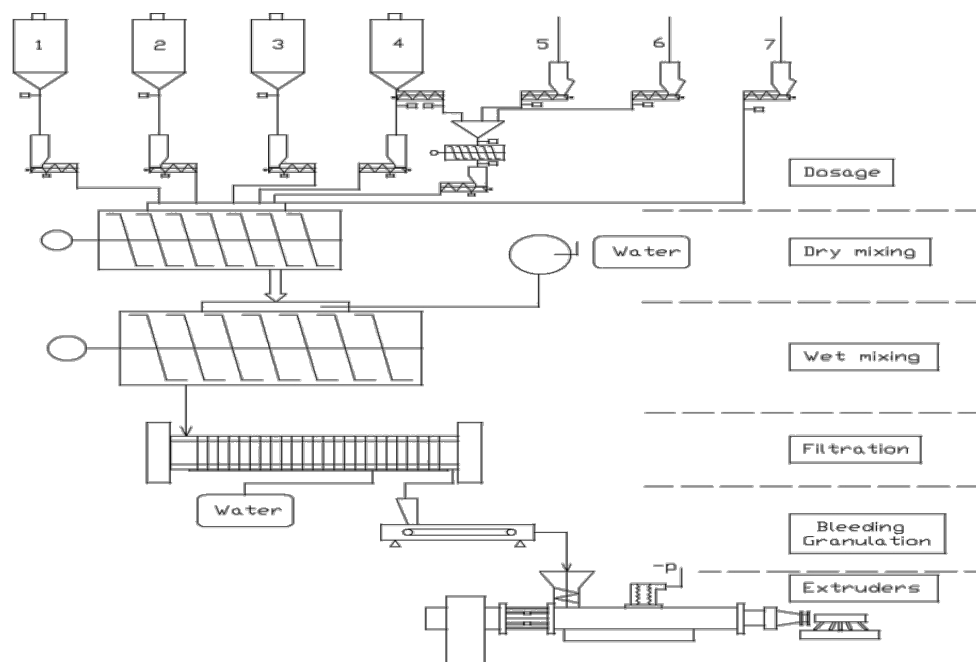
Fig.2. Scheme preparation and extrusion plant ceramic granules
The recipe contains: talc, calcined kaolin, calcined alumina, aluminum trihydrate, silica, lithium silicate, methylcellulose, the methylcellulose-b, a starch gel, olein, diglycol stearate, dispersed acrylic, monoethylene glycol, water/solid

The process of drying the extruded semifabricated points out three successive stages:
- the initial water loss is accompanied by a high shrinkage, proportional with the amount of water removed;
- at a later water disposal, the contraction continues, the product loses its plasticity and gains greater porosity;
- the drying process is completed by contraction and an increase in porosity

During drying, one must ensure that the surface drying speed is not too high because it causes overheating and increased water vapor inside the product, which leads to its delamination.

Taking into account the complex form and the profile of the ceramic extrusion we applied the drying system with high frequency currents, a system which is able to eliminate water from the semi-fabricated from inside to outside with constant speed, without damaging the extruded physically and mechanically.

The drying method consists of an applicator, the drying oven type with vertical sliding doors for the introduction and the extraction of the materials subjected to the drying treatment.

The pillars with semifabricated for drying are placed on trolleys, their movements is accomplished with proper drive and the porosity in the treatment room is controlled by position translators.

After drying the extruded semifabricated are cut with diamond blades at high speed, at a length equal to the length of the final piece plus the burning contraction.

To obtain the cordierite ceramic monolithic support I applied the technology of composing cordierite during burning treatment, to which the dry semifabricated is subjected.

3.CONCLUSIONS

The experimental research carried out aimed to verify the quality of the monolithic ceramic support obtained through the fabrication and technology I proposed. In this regard, the physico-mechanical properties of the primary monolithic support have been tested and corroborated with these properties impregnation and convertibility tests have been carried out under static conditions on a simulator which allows the simulation and the variation of exhaust gases. In order to determine the type of action of the catalytic system placed on the secondary support of the ceramic monolith on the gases mixture which simulated the exhaust gas, a theoretic thermodynamic study was performed in order to identify, under the work temperature conditions, the oxidation reactions thermodynamically favored, which subsequently were experimentally verified and confirmed. The study of these oxidation reactions pointed out the high quality of the ceramic monolithic support, its adaptability to being covered with a secondary support and precious metals and to be used in the manufacture of automobile catalytic unpollutant convertors.

Air pollution harms human health and the environment. In Europe, emissions of many air pollutants have decreased substantially over the past decades, resulting in improved air quality across the region. However, air pollutant concentrations are still too high, and air quality problems persist. A significant proportion of Europe's population live in areas, especially cities, where exceedances of air quality standards occur: ozone, nitrogen dioxide and particulate matter (PM) pollution pose serious health risks.

REFERENCES

1.Iordache Ghe. 2003, *Metode si utilaje pentru prevenirea poluării mediului*, MATRIXROM Bucureşti;

2.Popa, N, 2004, *Ecotehnologii*, Ed. Universităţii din Piteşti;

3.Tomescu, C, 2008, *Ecotehnologii*, Ed. Sitech, Craiova, 2008;

4.Tomescu, C, ş.a. 2005, *Integrare şi globalizare – Sesiunea Internaţională Poluarea atmosferei de către automobile şi posibilităţi de combatere a acesteia*, Ed.Universităţii din Piteşti;

5.Tomescu, C, ş.a. 2004, *Legislaţia şi organizarea protecţiei mediului. Aderarea României la Uniunea Europeană – Sesiunea Internaţională* , Bucureşti;

6.Tomescu, C, ş.a.2004, .*Diminuarea poluării mediului prin refolosirea materialelor rezultate din dezmembrarea autovehiculelor*, Sesiunea Bucureşti;

7.Tomescu, C, ş.a 2005, *Tehnologii moderne. Calitate. Restructurare. Conferinţa Ştiinţifică Internaţională*, T.M.C.R., 2005, Chişinău, mai 2005;

8.Visan S., Angelescu A., Alpopi C., 2000, *Mediul inconjurator-poluare si protectie*, Ed.Economica, Bucuresti, 2000.

CLEAN ENERGY, A SINE QUA NON CONDITION FOR SUSTAINABLE DEVELOPMENT

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Abstract
Bearing in mind the fact that Europe's energy transition is already well underway, the purpose of this paper is to carry out a comprehensive analysis in order to determine the contribution of renewables in the production of primary energy and the impact of the increase of the share of renewable energy on energy prices and thus on the economy. The study covers the period from 2011 to 2015, and the information has been taken from the most recent studies conducted at the level of the EU and in Romania, regarding the action plans for renewable energy sources and energy efficiency. Out of the data collected, our analysis has focused on the share of renewables in energy production, the production of primary energy using renewables divided into individual sources and consumption patterns for the main areas of the national economy, so as to see the way in which certain factors influence the future of clean energy. The analysis was carried out using a dynamic analysis tool based on input data, the @RisK module included in the Palisade software package which, by means of several simulations, allows the user to combine the uncertain values identified. The results of the analysis and simulations carried out have revealed the best scenarios to increase the share of renewables in energy production, to lower energy prices and to encourage sustainable growth.

Keywords: *renewable energy, Romania, dynamic analysis, support scheme, sustainable growth, energy potential, green certificates*

Classification JEL: *C61, Q42, Q48*

1. INTRODUCTION

The 2015 Paris Agreement, the world's first comprehensive agreement on climate change, has formalised EU's target to reduce greenhouse gas emissions by at least 40% by 2030, which called on the EU member states to adopt strong measures in order to support renewable energy sources. Renewable energies are considered to be that type of energy from sources that either regenerate themselves in a short time or are practically inexhaustible sources. The term refers to renewable form of energy produced by energy transfer of the energy resulting from renewable natural processes (European Parliament,

2016). The increase in demand for electricity during certain periods and its massive drop in other periods have a crucial impact as far as the need for flexible energy resources is concerned. Therefore, the existence of reliable solutions which are able to store solar and wind energy is an absolute prerequisite if we want to stop using non-renewable sources as sources of electricity (YAO, et al. 2016).

The European Parliament is constantly calling for the use of energy from renewable sources, and thus, by means of its resolution adopted in June 2016, has suggested to the Commission to increase up to 30% the EU's target on energy from renewable sources so that it can be reached through individual targets of the member states. Therefore, in 2016, more than one quarter of the total production of primary energy within the EU-28 came from renewable energy sources and the increase in primary production using renewable energy sources exceeded the share of total primary energy production from other sources of energy (Eurostat, Statistics-explained, 2017).

Taking into consideration the importance given to new energy sources, in this paper we focus on the following issues: the way in which the economy change influences energy consumption and its patterns; the contribution of renewable energy sources to primary energy production; the connection between renewable energy and energy prices; the impact of clean energy on the economy, the evolution of the installed electrical capacity of the systems using renewable sources according to their promotion system. We have therefore collected all the data provided by the most recent studies conducted at the level of the EU and in Romania from 2011 to 2015 and, using a software package (Palisade - @RisK), we have conducted several simulations based on pre-determined scenarios, in order to observe the way in which various factors affect the future of clean energy and to determine their impact on energy prices. These results enable us to say that the most appropriate option for Romania is to carry on using electricity produced using different sources of energy (and to consider all fuels as sources for energy production), while also taking into account any solution that could contribute to the reduction of greenhouse gas emissions, so that it can ensure its sustainable energy security.

2. GENERAL FRAMEWORK

Primary energy production covers the production of primary energy sources and takes place when natural resources are exploited, for example, in coal mines, crude oil fields, hydropower plants, or in the fabrication of biofuels (Eurostat, 2017).

Exhaustible primary energy sources are limited (in time and space) as they can only meet the needs of humans for a certain period of time (fossil and nuclear fuels). According to the International Energy Agency (2015), the share of electricity from renewable sources will increase by 45% between 2013 and 2020. According to a report published by Bloomberg New Energy Finance (2016), in 2040, 70% of Europe's and 44% of the USA's electricity will be produced using renewable sources of energy, reducing the share of natural gas in the energy mix from 33% to 31%, which basically means that the share of natural gas in energy production is expected to decrease with the use of renewables by 2027. In 2015, investments in renewable energy reached historic highs ($286 billion), and this also marks the first time new installed renewables have topped the capacity added

from all conventional technologies, whereas the production capacity of green energy worldwide has reached the equivalent of 55% of the capacity of new installations, and total installed capacity of renewable energy exceeded coal for the first time (the IEA report, 2016). The energy potential of renewable energy sources in Romania consists of a wide range of resources which can be used to produce electricity (hydro, nuclear, gas, coal, renewable sources - wind, solar, biomass), but only a certain amount of these resources can be used due to environmental restrictions, to the technologies required for the construction of the facilities and the storage of energy, to natural limitations that lead to higher electrical energy productions costs as compared to those associated with the use of fossil and nuclear fuels (except for large hydroelectric plants) (PNAER, 2010).

In order to increase their sustainability, investments in renewable energy needed to be stimulated, and Romania has established a highly generous support scheme for this purpose (introduced in 2008 to support the achievement of the EU's 2020 target related to energy consumption using these sources), by means of which the corresponding authorities issued a certain number of green certificates for every megawatt of electricity produced, but the cost of these certificates was however reflected in the price paid by the final consumers. Once investments in this field went through an exponential growth, electricity costs were no longer cost-efficient and, therefore, the government has amended the support scheme, aiming at reducing its impact which was easily noticeable on the electricity bills of the final consumers, by means of a payment schedule for the amounts due by electricity consumers in order to support the promotion scheme and to improve the functioning of market mechanisms provided for in the green certificates promotion scheme. Those who are the most affected by this situation are small power producers and the producers that do not perform other types of activities in this area, such as power supply and distribution (about 30% of all producers run the risk of insolvency for this reason). According to economica.net (2017), 2016 was a very bad year for the Romanian renewable energy industry, as over 40% of all producers have declared bankruptcy. The global energy market is huge, but it is particularly important to identify the most efficient energy sources. According to a study (Gaddy B., et. al., 2016) conducted in the summer of 2016, investments made in renewable energy between 2006 and 2011 haven't proved to bring any profits so far, as it is estimated that investors lost more than half of the $25 billion invested. Thus, in order to reach performance, it is necessary to make long-term investments and in a sustained manner, to invest in new technology that are able to identify the best, the most efficient and the most affordable energy sources. Apart from the sources found in nature, using renewable sources of energy also refers to the use of appropriate technologies for the recycling and reuse of materials (Busch et al., 2017). According to Mathews (2013), the use of technologies based on renewable energy can lead to the emergence of several new techno-economic paradigms. Therefore, energy storage may be a technology trend that brings a breath of fresh air in the energy sector, generating equally as many challenges as opportunities and benefits for all stakeholders, both for producers and consumers. Renewable energy sources are far from being as useful as fossil fuels are in everyday life, but by means of a series of projects which have recently been implemented in the past few years, the future can become cleaner, greener.

3. METHODOLOGIES

In this study we aim at carrying out a comprehensive analysis in order to determine the contribution of renewables in the production of primary energy and the impact of the increase of the share of renewable energy on energy prices and thus on the economy. Our research work has started once we have identified the necessity of shifting towards alternative sources of energy, then we focused on establishing the share of renewables in the total energy production, and their evolution so that we can carry on with an analysis that enables us to observe the way in which certain factors influence the future of clean energy and to determine their impact on energy prices. The information used to perform this research has been provided by the studies conducted at the level of the EU and in Romania which cover the period from 2011 to 2015, (the Annual Report on the activity of the Romanian Energy Regulatory Authority, Monitoring report on the operation of the promotion system of electricity produced from renewable sources, the Energy balance and energy equipment structure, Report on progress towards achieving national targets for energy efficiency), regarding the action plans for renewable energy sources and energy efficiency. The predictive analytics shall be carried out using a dynamic analysis tool based on input data, the @RisK module included in the Palisade software package which, by means of several simulations, allows the user to combine the uncertain values identified in the model input data. The results of the analysis and simulations carried out have revealed the best scenarios to increase the share of renewables in energy production, to lower energy prices and to encourage sustainable growth.

4. RESULTS AND DISCUTION

Based on the data collected, we have conducted several analysis and simulations on the structure of primary and electric energy resources, the structure of energy consumption according to the main fields of activity of a country's economy, the installed electrical capacity, production and evolution between 2011 and 2015, its impact on energy prices and the economy. The number of available energy resources decreased in 2013 as a result of the decrease in primary energy production and energy commodity imports, followed by a growth in these resources, mainly due to the increase of hydropower wind, solar and photovoltaic resources. The primary energy production during the period in question (2011-2015) has continued to preserve its significant share among all the other types of energy resources used, reaching on average a 62.7% share, but even so we are able to see that the figures have decreased after 2013. However, we can also notice that certain changes have been made as far as the structure of electric energy production is concerned, due to the policy related to the emergence and development of plants using renewable sources, whereas the share of production of the plants using conventional sources of energy faced a significant drop every year as compared to the use of energy produced using renewable sources. As far as energy consumption is concerned, it has decreased in 2015 in comparison with 2011 by 3.75%, while the total energy consumption in industry faced the largest decrease (9.23%) which has a significant share in the total consumption (about 30%), followed by the total energy consumption of the population (6.29%), accounting for a share of approximately 35% in the final energy consumption. Thus, we can say that the

disappearance or the decrease in the number of certain important sectors of the economy leads to a decrease in energy consumption, and this drop is outweighed by the development of the tertiary sector, of agriculture and transport, which have a total share of 36.86% in the total final energy consumption, thereby offsetting somehow the decreases of the final energy consumption in industry and households (which have a total share of over 65% in the total final energy consumption).

As far as the capacity of the plants using renewable resources is concerned (Table 1), there is a significant increase (only hydro capacity has decreased) in 2015 in comparison to 2011 (356.7% for wind power stations, 424% for biomass power plants, whereas photovoltaic power stations experienced the largest increase – from 1 MW, they reached 1226 MW). This is mainly due to the promotion system of clean energy by means of green certificates which has had an upwards share increase from 9.35% of the total production of energy from renewables, reaching 31.44% in 2015. There were significant increases in electric energy production using hydropower, wind and photovoltaic solar energy until 2015, when the industry faced a 1.81% drop in comparison to 2014. Although the share of thermoelectric energy is continuously decreasing (except in 2015), it still is the most significant resource (with an average share of 66.7%) in the production of electric energy. The share of energy produced using renewable sources in gross final electric energy consumption recorded an increase from 31.7% in 2011 to 44% in 2015. We note that *the contribution of renewables to primary energy production faces a significant increase*. After the energy simulation process and upon choosing the most appropriate distribution in terms of the development of the production pattern according to the main resources used, and depending on their development between 2011 and 2015, there has been an increase of the total production (62479.88), and a steady decrease as far as renewable energy sources are concerned (hydropower: 15802.36, wind power: 3767 and solar power: 897.16) and the increased production of thermoelectric energy (41904.01).

An analysis of the costs related to electricity production has allowed us to identify a substantial decrease thereof due to the use of renewable energy sources, but even so the price paid by the final consumers has increased. Thus, assessing the development of the impact related to the use of the E-RES promotion system in electricity prices to the final consumer, we saw that it has increased progressively starting with 2011 and until 2013, when it faced a decrease due to both the reduction of the mandatory annual share of electricity produced from renewable energy sources, that benefits from promotion by means of green certificates support scheme, and the weighted average selling price of green certificates, as the support scheme for energy produced from renewable sources was amended only after 2014. The unit income of E-RES producers (which depends on the quantity of electric power being sold) benefiting from the promotion system (Euro/MWh) has been constantly declining, while also lowering the share of green certificates within this income (from 60.24% down to 49.72%). Upon carrying out the sensitivity analysis and performing several simulations using various pre-determined scenarios, we note that *if renewable energy production decreases*, based on the energy mix we use, *energy prices will increase* substantially (by 40 to 50%). As the production of equipment increases and clean energy technologies develop, *the costs related to energy production from renewable sources* will eventually face a decrease.

5. CONCLUSIONS

Electric energy consumption is influenced by a country's level of economic development, by the living standards of the population and, last but not least, by the efficiency of the technologies used. Energy produced from renewable sources is increasingly being used in everyday life, but given the fact that the costs related to the use of renewables are still quite high is the main reason that explains why people still need to carry on using energy from fossil fuels, and thus, why electricity prices will continue to be determined in the future to a large extent depending on the price of fuel. Assuming that renewable energy capacity will continue to develop in the following period, in order to create sustainable development based on the use of clean energy, we can honestly say that as a consequence for not being able to lower production costs for this type of energy and to provide further support schemes to producers, or failing to eliminate coal subsidies, the use of this type of energy will rather decrease than increase, which is not at all beneficial for our country's position as compared to the other EU member states. Finding the most appropriate and smart solutions for the storage of surplus green energy will bring many opportunities and benefits for all stakeholders, both for producers and consumers, and will have a direct impact on Romania's position at a regional level.

REFERENCES

1. Buscha J., Dawsonb D., Roelicha K., Closing the low-carbon material loop using a dynamic whole system approach, Journal of Cleaner Production, Volume 149, 15 April 2017, pp. 751–761, http://www.sciencedirect.com/science/article/pii/S09596526173x

2. Gaddy B., Sivaram V., O'Sullivan F., Venture Capital and Cleantech: The Wrong Model for Clean Energy Innovation, An MIT Energy Initiative Paper, Cambridge, July 2016, http://energy.mit.edu/wp-content/uploads/2016/07/ MITEI-WP-2016-06.pdf

3. Mathews J.A., The renewable energies technology surge: a new techno-economic paradigm in the making?, Futures, 46, 2013, pp. 10–22 http://dx.doi.org/10.1016/ j.futures.2012.12.0

4. Yao L., Yang B., Cui H., Zhuang J., Ye J., Xue J., Challenges and progresses of energy storage technology and its application in power systems, Journal of Modern Power Systems and Clean Energy, October 2016, Volume 4, Issue 4, pp 519–528, http://link.springer.com/article/10.1007/s40565-016-0248-x

5. Autoritatea Națională de reglementare în domeniul energiei, (2012-2016) Raportul Anual privind activitatea Autorității Naționale de Reglementare în domeniul Energiei

6. Bloomberg New Energy Finance/UNEP, Global Trends in Renewable Energy Investment, 2016, http://fs-unep-centre.org/sites/default/files/publications/globaltrend sinrenewableenergyinvestment2016lowres_0.pdf

7. Economica.net, 22.02.2017, http://www.economica.net/peste-40prc-din-producatorii-de-energie-regenerabila-sunt-in-situatie-de-faliment-in-acest-an-monssongroup_115114

8. European Parliament, Promotion of renewable energy sources in the EU, EU policies and Member State approaches, European Union, 2016, June 2016,

http://www.europarl.
europa.eu/RegData/etudes/IDAN/2016/583810/EPRS_IDA(2016)583810_EN.pdf

9. Eurostat, Statistics-explained, Energy production and imports, June 2017. http://ec.   europa.eu/eurostat/statistics-explained/index.php/Energy_production_and_imports

10. International Agenty Energy (2015), Energy Climate and Change, World Energy Outlook Special Report,   https://www.iea.org/publications/freepublications/publication / WEO2015SpecialReportonEnergyandClimateChange.pdf

11. Planul Național de Acțiune în Domeniul Energiei din Surse Regenerabile (PNAER), 2010, http://www.minind.ro/energie/PNAER_final.pdf

12. The Paris Agreement: the world unites to fight climate change, Decembre 2015, https://ec.europa.eu/clima/policies/international/negotiations/paris_en

THE GREEN ECONOMY PERSPECTIVES IN EASTERN EUROPE: THE CASE OF ROMANIA

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Abstract

This paper examines EU policies and initiatives promoting the Green Economy, paying attention to resources management and efficiency, sustainable future of the economy, innovation and sustainable production and consumption. The consequences of the recent economic and financial crisis are discussed as well, on the background of the environmental issues and the fundamental imbalances of the economy. Our analysis aims at finding how Eastern European countries comply with the new and challenging transition to the Green Economy, presenting Romania as a case study.

We explore the emerging measures and policies of Green Economy in Romania, with a focus on Romanian companies' adaptation to the challenges of sustainable development and the business opportunities created by Romania's transition to the Green Economy. The case study investigates the advantages and shortcomings of the Grren Hoise Programme.

Our conclusion is that Romania has problems in terms of beaurocratic hurdles and there is big room for improvement, especially taking into account the important role played by this country in Eastern Europe.

Keywords: *green economy, European Energy Action Plan, sustainable development, Green House Programme Romania*

Classification JEL: *Q28, Q50, Q58.*

1.INTRODUCTION: THE CONCEPT OF "GREEN ECONOMY"

UNEP (United Nations Environment Programme) defines a *green economy* as „one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive" (UNEP, 2015). Green growth is also defined by the OECD (Organization for Economic Cooperation and Development), Green Growth Report as „fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies" (OECD, 2011).

Green economy is considered by Burkhart (2009) as a complex one reffering to: **r**enewable energy, green buildings, sustainable transport, water management, waste management and land management.

2.EU POLICIES PROMOTING THE GREEN ECONOMY AND THE EASTERN EUROPE'S CHALLENGES IN COMPLYING WITH THEM

This section analyzes EU policies and initiatives promoting the Green Economy, paying attention to resources management and efficiency, sustainable future of the economy, innovation and sustainable production and consumption. The Eastern Europe efforts to comply with the EU requirements in this field were made more difficult by the economic crisis context.

The fall of communism in Eastern Europe led to large-scale structural changes and a wave of de-industrialization. This shift had some environmental benefits, but Eastern Europe inherited a continued environmental degradation, pervasive energy inefficiency, obsolete and big energy consuming technologies and, of course, the associated costs. Our paper shows how this legacy has offered a great opportunity for mainstreaming the environmental objectives into national and sectoral policies.

3.THE CASE OF ROMANIA

Romania's situation is an example of a Eastern European country that has to improve significantly its national policy regarding the transition to green energy. There are some specific issues regarding the public policy in energy, about: benefits (not only for the population, but also for the sectors in Romania's economy), social aspects (number of jobs in the so-called "green job" sector, earnings and returns), policy (some specific projects, as part of the public policy regarding energy and environment), environmental dimension (an analysis of the CO_2 emisssion reduction in Romania) and reliability.

Our case study focuses on Green House Programme (Casa Verde) for residential, social and public sector. This programme, established in 2010, restarted in October 2016. For a small period of 2 weeks residential investors could apply for funding of a solar thermal installation or a heat pump. Applications of public and religious institutions were accepted between 17 October to 1 November 2016.

4.CONCLUSIONS

European Union is one of the more concerned and determined part of the world in developing *the transition of its member to greeen economy*. In this sense, especially by involving the member-states, but also by coherent strategies and actions, EU created mechanisms for transition to green economy, which Eastern European countries try to comply with.

For Romania, this represents a real opportunity to be a beneficiary of the latest technologic progress, in order to improve its own energetic infrastructure and to become an important actor of the local/regional energy security.

The number of applications for Casa Verde Programme was higher than expected, which has prompted the environmetal ministry to increase the budget for the short-lived

application period. So the national funding for Casa Verde Programme was increased. The budget for the residential sector was raised from RON 60 to RON 80 million to allow another 3,000 people to benefit from green heating funds.

However, Romania is the only major country in Europe without a commercial manufacturer of solar flat collectors. All other Eastern Europe neighbouring countries (Serbia, Bulgaria, Hungary and Ukraine) have already seen a number of component manufacturers being established, but Romania has not. The reason was found in the inconsistency of the country's support policy and the high and bureaucratic hurdles. After the approval of the applications, there are still contracts to be signed and furher papers to be handed after the installation. Thus the policy recommendation appears of simplifying the bureaucratic procedures and creating a more transparent framework of the green economy programmes.

REFERENCES

[1] Burkart, K. (2009), *How do you define green economy?,* http://www.mnn.com/green-tech/research-innovations/blogs/how-do-you-define-the-green-economy, last accessed April 2017.

[2] OECD (2011), *Towards green growth – A summary for policy makers,* May 2011, available at https://www.oecd.org/greengrowth/48012345.pdf, last accessed April 2017.

[3] UNEP (2015), *Uncovering Pathways towards an Inclusive Green Economy – A Summary for Leaders,* available at http://www.unep.org/greeneconomy/sites/unep.org.greeneconomy/files/publications/ige_na rrative_summary_web.pdf, last accessed April 2017.

THE CITY OF TOMORROW; SUSTAINABLE URBAN METABOLISM IN THE FRAMEWORK OF CIRCULAR ECONOMY

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Abstract
Circular econnomy is receiving increasing attention worldwide as a way to overcome the current production and consumption model based on continues growth and increasign resources input. The main aim of circular economy is to increase the efficiency of resource use, with emphasis on urban and industrial waste in order to achieve balance and harmony between economy, environment and society. In order to reach this target is necessery to change the current consumption linean model (buy,storage,disposed) and make a turned to a more circular model in order to adopt the needs that are presented in the waste framework directive which include prevention, re use, recucling, recovery as well as to change our daily behavior regarding the way that we buy products. The objective of this paper was to identified, using the DPSIR model the major challenges occured due to the rapid urbanization and how they can be addressed throught the development of circular economy model with the ultimate goal to design smart cities.

Keywords: urban metabolism, circular economy, waste management

Classification JEL:

1. INTRODUCTION

Cities have expanded radically in size, density and complexity across the world (Holmes and Pincetl, 2012). Today, cities allocate about 50% of world's population, and it is expected that this number will increase up to 80% in the upcoming years.

The increasing trends of urban population and the restricting of urban economies ate the main factors that determine urban development in the 21st centure. World Bang report (2012) focuses on waste generation indicated that in all Regions we will have a continual waste amounts and the per capital waste production varies from 0.77 kg/day for SAR (South Asia Region) to 2.1 kg/day for OECD (Organisation for Economic Co-oporetion and Development region). The contradictions between urban development and

the ecological environment became more important since modern industrialization has been implemented.

2. PAPER BODY

2.1 Methodology

The analysis tools that were used for the identification of the urbanization major challenges were the DPSIR model. The Driver-Pressure-State-Impact-Response (DPSIR) framework has been adopted by the European Environment Agency and is useful in describing the relationships between the interactions between society and the environment. The components of this model are: Driving forces, Pressures, States, Impacts, and Responses (Zhou and others, 2015).

2.2 Results and Discussion

The urban territory is responsible for a high percentage of natural resources consumption and waste generation (Aelenei., 2016). The acceletate economic growth and operating cost are the main driving forces put pressure on waste production, change in composition analysis and overuse of land area. As a state factors are the emissions and the environmental pollution which cause impact on human health and biodiversity. Finally, response indicators are the treatment technology and the involvement of the stakeholders.

3. CONCLUSIONS

The rapid expansion has been accompanied by increased energy flows of inputs and outputs such as fuel, food, waste and electricity that enter, exit and/or accumulate within the external of the city boundaries (Kennedy et al., 2007).

A smart city could be an answer for improving energy efficiency, human living and environment, economy and governance. Smart city approach can deliver new insights into creating a data-driven approach to urban design and planning.

REFERENCES

Aelenei, L., Ferreira, A., Monteiro, S., Gomes, R, Gonçalves, H., Camelo, S., Silva, C. *Smart City: A systematic approach towards a sustainable urban transformation*. Energy Procedia 91, (2016), 970 – 979

Holmes, T., Pincetl, S. (2012). *Urban Metabolism Literature Review*. UCLA. Institute of the Environment and Sustainability. Center for Sustainable Urban Systems, Los Angeles.

Kennedy, C., Cuddihy, J., Engel-Yan, J. *The changing metabolism of cities.* Journal of Industrial Ecology 11, (2007), 43–59

World Bank Report, 2012. WHAT A WASTE: A Global Review of Solid Waste Management

Zhou, G., Singh, J., Wu, J., Sinha, R., Laurenti, R., Frostell, B. *Evaluating low-carbon city initiatives from the DPSIR framework perspective.* Habitat International 50, (2015), 289–299

THE EMERGING RESEARCH OUTLOOK ON GREEN INNOVATION

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Abstract
The need of understanding the emerging shifts occurred in the recent years regarding the relationship between the society and the environment has led to the development of bibliometric studies on green themes in the field of economics. The green innovation helps achieving the sustainable development of any region. The data was collected from the platforms Web of science and Scopus, as these are mainly representative in the economic field as well as because these two generate the most relevant and reliable results. Content analysis is important because it addresses both quantitatively and qualitatively treatment of scientific publications in order to determine the main drivers of the observed events. This study aims to analyze the research development on green innovation in view to observe the changes proposed by it in different economic sectors, to illustrate the most common key issues addressed in the field and to discover future directions of research. Also, the study considers the time frame and geography of research. The results of this research indicate the importance of green innovation in achieving sustainable development while emphasizing the connections between various themes in the field.

Keywords: green innovation, bibliometric study, Scopus, Web of Science, VOSViewer

Classification JEL: O13, O31, Y10

1. INTRODUCTION

Lately, new approaches of reviewing and presenting the literature review on various innovation and environmental topics have emerged in order to better substantiate the most discussed topics and the gaps in a certain research field. Schiederig and others (2011) conduct an exploratory literature review by quantitatively analyzing the number of publications over time, the main subject areas by referring to specific disciplines and the most cited authors and publications from Google Scholar between 1990 and 2010. Yet, Google Scholar is not well structured and sometimes is repetitive, so it is not as reliable as Scopus and Web of Science. In addition, Schiederig and others (2011) emphasize similarities between the definition of green innovation and the definitions of eco-innovation, environmental innovation and sustainable innovation. Also, it is found that the past research on green innovation discusses national/industry level topics while future

directions should focus on firm level topics (Schiederig and others, 2011). Another study (Durisin and others, 2010) shows that the analysis in time of the publications on product innovation indicates their evolution in terms of maturation of the research while the scientific literature has seen a transition from books to articles in order to emphasize specific topics. Moreover, Kovács and others (2015) highlight the importance of observing thematic clusters for signiling the gaps in the literature while conducting a bibliometric study on open innovation research.

In this context, the goal of this short paper is to emphasize the research development on green innovation in view to observe the changes and the main challenges in the field. This was achieved firstly by analyzing the evolution in time of the number of publications on green innovation, the main subject areas, the document type and the country of origin. Secondly, the most common key issues addressed on green innovation title and abstract of publications from Scopus and Web of Science were illustrated and discussed by using the VOSViewer software, version 1.6.4, that it allows for creating co-occurance networks which indicate the distances between terms (Van Eck and Waltman, 2016).

Scopus and Web of Science are the most reliable databases for conducting a bibliometric study in economics with the mention that Scopus has a broader content while Web of Science does not (Miguel and others, 2016). The search criteria on Scopus database established for conducting the short bibliometric study consisted in collecting the data for "green innovation" keyterm found in article title, abstract and keywords of all type of publications between 1960 and 2016. The search criteria on Web of Science (WoS) database consisted in collecting the data for "green innovation" keyterm based on the topic of all type of publications between 1975 and 2016. 319 study results were generated from Scopus starting with 1995 while 238 studies were generated from Web of Science (WoS) starting with 1993.

Finally, this paper addresses a quantitative approach of the literature review in the field of green innovation. The bibliometric studies help both researchers and policy makers to understand the main challenges most discussed in a field as well as the areas were the future research and policies should focus. So, our study illustrates in brief these aspects in the area of green innovation.

2. SHORT BIBLIOMETRIC STUDY ON GREEN INNOVATION

Green innovation is a necessary part of sustainable development. So, as expected, lately the scientific publications on green innovation have increased as illustrated in figure 1.
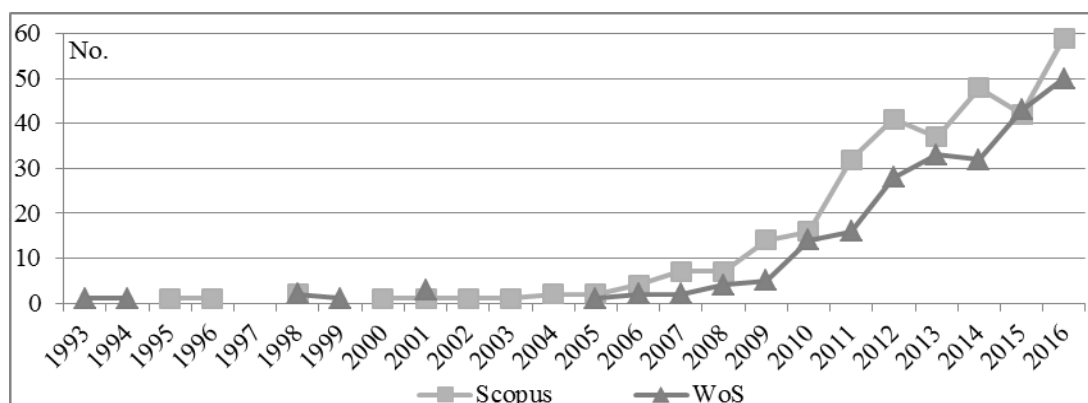
Fig.1. Green innovation studies over time

The main disciplines/subject areas related to green innovation studies from both Scopus and Web of Science databases are: business economics, engineering, environmental sciences and social sciences. Still, Scopus includes further energy and econometrics disciplines while WoS includes further public administration and telecommunication. When considering the document type, it is observed that Scopus includes 64.58% articles, 17.55% conference papers, 6.90% book chapters and 10.97% other types of publications on green innovation while Web of Science gathered 56.40% articles, 31.20% conference papers, 3.60% book chapters and 8.80% other types of publications on green innovation.

Although Schiederig and others (2011) found that green innovation studies from Google Scholar are mainly from Europe, the more complete analysis made on the green innovation publication from Scopus and WoS suggested that the most active sholars are situated in China and Taiwan, with 29.47% of all studies in the case of Scopus and with 36.55% of all studies in the case of WoS. However, 94 studies from China and Taiwan have been published on Scopus since 1995 and until 2016 while in the case of WoS only 87 studies. Further, the next highest numbers of studies on green innovation are those with scholars from United Kingdom (10.34%), United States (9.09%) and Japan (5.33%) in the case of Scopus and from United States (7.56%), England (6.30%) and Malaysia (6.30%) in the case of WoS. Also, although the scholars from Romania have started to focus more on sustainable development studies, there was no recorded study on green innovation. Yet, the analysis did not consider the publications written in Romanian language.

The results of the analysis on green innovation co-occurrence networks which illustrate the most common key issues addressed on this topic from the title and abstract of publications from Scopus and Web of Science are illustrated in figure 2.
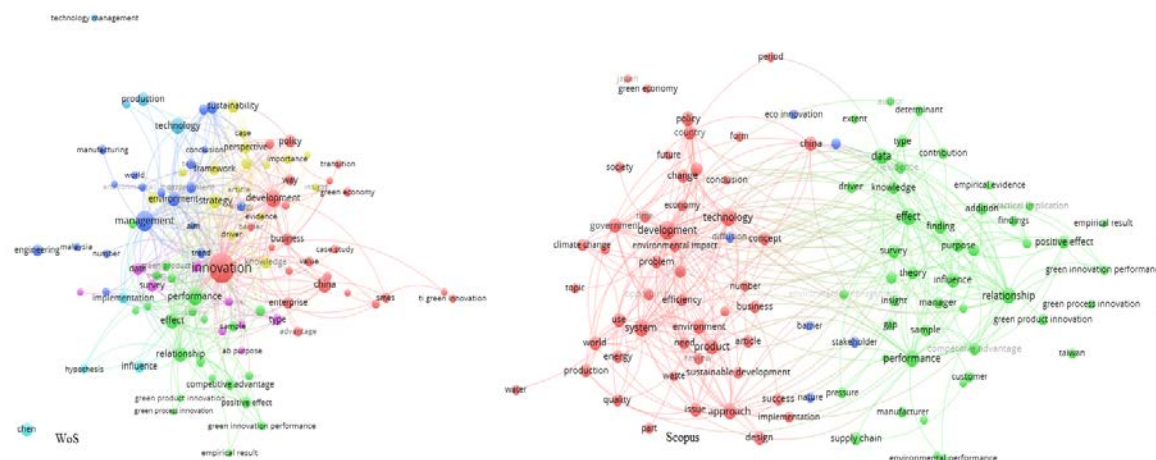
Fig.2. Green innovation networks for the terms from WoS and Scopus between 1993 and 2016

Out of 6930 terms from the studies on WoS, 156 terms occurred more than 10 times, of which 100 terms the most relevant were illustrated. The most occurent terms refer to innovation, management, performance, China, technology, effect, relationship, environment, sustainability, framework, policy. The most relevant terms refer to engineering, technology management, green innovation, future technology, small and medium size entreprises, green innovation performance, manufacturing, transition and green economy.

Out of 6876 terms from the studies on Scopus, 160 terms occurred more than 10 times, of which 100 terms the most relevant were illustrated. The most occurent terms refer to development, effect, system, technology, relationship, product, government, policy, China, influence, environmet. The most relevant terms refer to green innovation performance, Taiwan, green process innovation, water, positive effect, practical implication, Japan, production, climate change, gren economy, relationship, green practice.

Compared to the Schiederig and others (2011) study of Google Scholar, our findings on the green innovation studies from Scopus and WoS suggest scientific disscusions both on national/industry level and microeconomic level.

3. CONCLUSIONS

This paper presented an outlook of the emerging research on green innovation by quantitatively analyzing the number of publications over time, the main subject areas, the document type, the country of origin as well as the most common key issues addressed in the title and abstract of publications from Scopus and Web of Science.

The main findings suggest that the scientific literature on green innovation has increased since 1993 until 2016 and that the main sholars are from China and Taiwan. Both Scopus and WoS studies speak about the relationship between innovation and sustainability and the importance of green policies in creating Still, Scopus green innovation studies have a broader approach. As among the analysis performed on small

and medium enterprises and the emphasis of the role of technology in stimulating innovation for sustainable development, topics which are discussed by WoS studies also, Scopus studies illustrate also the role of government in implementing coherent framework and policies for supporting the green innovation both for green economy and sustainable development.

REFERENCES

1. Durisin, B., Calabretta, G. and Parmeggiani, V., "The intellectual structure of product innovation research: a bibliometric study of the journal of product innovation management, 1984–2004", *Journal of Product Innovation Management* 27(3), 437-451, 2010.

2. Kovács, A., Van Looy, B., and Cassiman, B. "Exploring the scope of open innovation: a bibliometric review of a decade of research", *Scientometrics*, 104(3), 951-983, 2015.

3. Miguel, S., Tannuri De Oliveira, E. F., and Cabrini Grácio, M. C. "Scientific production on open access: a worldwide bibliometric analysis in the academic and scientific context", *Publications*, 4(1), 1, 2016.

4. Schiederig, T., Tietze,F. and Herstatt, C. *What is Green Innovation? A quantitative literature review*. No. 63, Working Papers / Technologie-und Innovationsmanagement, Technische Universität Hamburg-Harburg, 2011.

5. Van Eck, N.J. and Waltman, L., *Vosviewer Manual, Version 1.6.4*. Universiteit Leiden, 2016. Available online at: http://www.vosviewer.com/getting-started#vosviewer%20 manual. (Accessed at 19.01.2016)

GREEN ACCOUNTING AND ITS INFLUENCE ON PROMOTING GREENHOUSE GAS EMISSIONS REDUCTION

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Abstract

In the sustainable development`s context, we note the significance of green accounting in coverage of environmental issues. In this paper we analyzed different points of view and solutions for green accounting in order to recognize different costs generated by the environmental impact for companies. Minimizing environmental impact is made on courses of action like replacing polluting energy with less pollution ones, introduction of technologies to reduce greenhouse gas (GHG) emissions and increase energy efficiency. Green accounting must provide solutions related to how a company can determine the cost of the products they made taking into account their environmental impact and also how to take into account environmental performance.

Keywords: green accounting, sustainable development, greenhouse gas emissions, emissions permits, financial product, trading scheme

Classification JEL: M41, Q01, Q56

1. INTRODUCTION

Pollution permits were used for the first time in the US in 1970 for air quality control, in the application of "Clear Air Act" to reduce air pollution. At EU level, greenhouse gas emission allowances are covered by Directive 2003/87/EC, which was transposed into Romanian legislation. The goal of European scheme for greenhouse gas emissions trading (EU Emissions Trading Scheme – EU- ETS) is to reduce carbon dioxide emissions of member states by controlling emissions of the largest polluters in each state. EU member states have started to apply the ETS in 2005 and Romania participate in the

ETS from 2007. This trading scheme has important implications for economic activity, especially in the energy sector and energy intensive industries. At EU level, the European Environment Agency (EEA) is responsible for preparing and publishing the annual report on GHG emissions. In Romania, the GHG registration takes place in a national registry. Trading output led to the creation of specific markets. As the need for sustainable practices in the business becomes clearer, sustainability reporting offers real values to those who have the responsibility of evaluating the current financial position of the companies and anticipating their future performances (Caraiani, et al., 2009).

Christophe B. (2000) estimates that green accounting can not be confused with a reflection of environmental costs in traditional financial statements, but it is an efficient information system on the degree of scarcity of natural elements, determined by the activity of different entities, used to to reduce these scarcity and to inform third parties. This means, in his opinion, there will be periodically presented environmental information, information that currently traditional accounts do not provide.

Likewise, Moorthy and Yacob (2013) articulated the prime role of green accounting as confronting the social environmental problems and pointed out its potential influence on reaching sustainable development by amending the company's behavior in defying social and environmental responsability issues. (Caraiani et al., 2015)

2. DEVELOPMENTS OF CERTIFICATES FOR TRADING GREENHOUSE GAS

The establishement of European market for GHG had some immediate effects such as the formation of new specialists in this field: negotiators, financial experts, auditors and new financial products and investment vehicles such as funds 'carbon' have appeared. Worldwide, there is a specific market and voluntary market for trading of GHG certificates. EU market, launched in 2005, was valued at 7.9 billion US dollars, equivalent to 321 million tons of carbon dioxide. The main buyers of certificates are Japan, Britain, Italy and the Netherlands. States that have sold the most certificates are China and Brazil.

3. APPROACHES REGARDING ACCOUNTING OF EMISSION ALLOWANCES GREENHOUSE GAS

Emissions permits are a new phenomenon for accounting work and there is no consensus on their accounting treatment and disclosure in annual reports. Regarding trends in regulatory accounting of emission allowances for greenhouse gas emissions, the International Accounting Standards Board (IASB) launched in 2002 a project to establish the accounting treatment on permits of GHG emissions because of the risk of developing different practices and International Financial Reporting Interpretations Committee (IFRIC) concluded that it is the most important issue of guidelines to prevent divergent practices. Emission rights approach only the treatment of permits allocated to entities by national allocation plans. The purchases made by entities that are not constrained to cut emissions are not dealt with nor any accounting treatment applied to the broker or other

intermediary institutions to which they are not assigned. For industrial companies, emission allowances corresponds to intangible assets and for trading companies they can also be purchased and disposed as financial instruments. The transferability of emission allowances led to the creation of specific markets they can be traded like London Stock Exchange and Chicago Climate Exchange.

Accounting is the main source of information that allows estimating the value of an organization, so it needs to reflect environmental issues that may have significant financial consequences. Given the financial impact of pollution, destruction of environment, organizations must submit information on policies, objectives and environmental policies implemented, expenses that they have engaged in this area, environmental risks they face. Objectives supporting energy efficiency are renewable energy development and investment to reduce energy consumption.

The impact of actions on the environment and society is determined by green accounting, as well as eco-indicators, eco-points, and eco-certifications assessing the climate change. (Caraiani et al., 2015) The prime role of green accounting as confronting the social environmental problems pointed out its potential influence on reaching sustainable development by amending the company's behavior in defying social and environmental responsibility issues. Lack of environmental information in the annual reports of UN experts has been observed since the 80s, which has mobilized various working groups for consideration of this issue. They published some studies which presented practices and developed environmental guidelines for disclosure. The general framework of International Accounting Standards (IAS) / International Financial Reporting Standards (IFRS) encourages submission of additional cases if the information had a significant impact, such as an environmental report or a management report that presents key performance characteristics and uncertainties that the entity still faces. Publishing an environmental report is up to the entity. In environmental reports are presented financial information (environmental costs) and non-monetary qualitative and quantitative information (political exploitation of natural resources, water, energy, waste, etc.). The absence of standardization on the disclosures makes it difficult for comparisons between companies and from one year to another for the same company.

4. CONCLUSIONS

In this article, the authors focused on the specific situation from the European Union and Romania. Companies that publish reports on the social and natural environment are able to choose the indicators they consider most relevant. The analysis covered both how these permits are trading and accounting registration method. So, the pollution creates new trading, financial and accounting methods and generates efforts for set up convergence practices in these fields.

REFERENCES

1. **Beattie, V., Smith, S. J.**. 2013. *Value creation and business models: Refocusing the intellectual capital debate*, The British Accounting Review, no. 45, pp. 243-254;

2. **Beţianu L.**, 2008, *Calitate totală în contabilitatea mediului*, Universitatea „Alexandru Ioan Cuza" Publishing House, Iaşi;

3. **Bunea Ş.**, 2013, *Analiza raportului dezvoltare durabilă – responsabilitate socială şi a implicaţiilor acestuia asupra raportărilor companiilor*, Economistul Review, nr. 22;

4. **Cairns R.D., Lasserre P.**, 2006, *Implementing carbon credits for forests based on green accounting,* Ecological Economics 56 (2006) 610– 621;

5. **Caraiani, C., Guse, R.G., Lungu, C.I. and Colceag, F.**, 2009. *Triple Bottom Line (TBL) reporting. New performance reporting tools in a knowledge based management approach,* Chronicles of Oradea University-Economics, 18(3), pp. 838-843;

6. **Caraiani, C., Lungu, C., Dascalu C.I., Colceag, F.**, 2015, *Green Accounting Initiatives and Strategies for Sustainable Development*, IGI Global, USA;

7. **Cho C.H., Patten D.M.,** 2013, *Green accounting: Reflections from a CSR and environmental disclosure perspective,* Critical Perspectives on Accounting, 24 (2013) 443–447;

8. **Cristophe B.**, 2000, *Environnement naturel et compatibilité*, in *Encyclopédie de Compatibilité Contrôle de Gestion et Audit,* sous la direction de Colasse B., Economica, Paris;

9. **Cristophe B.**, 2003, *La compatibilité verte ou comment mieux informer pour contribuer au développement durable*, in Revue Française de Compatibilité, no. 356;

10. **Deegan C.**, 2013, *The accountant will have a central role in saving the planet . . . really? A reflection on 'green accounting and green eyeshades twenty years later'*, Critical Perspectives on Accounting, 24 (2013) 448–458;

11. **FASB**. 2011. *Conceptual Framework for Financial Reporting*;

12. **Gray R**., 2013, *Back to basics: What do we mean by environmental (and social) accounting and what is it for?—A reaction to Thornton,* Critical Perspectives on Accounting 24 (2013) 459–468;

13. **Jianu I.**, 2007, *Evaluarea, prezentarea şi analiza performanţei întreprinderii*, CECCAR Publishing House, Bucureşti;

14. **Jianu I.**, 2007, *Contabilitatea verde – o nouă "revoluţie"*, Gestiunea şi contabilitatea firmei Review, nr. 3, p. 58-63;

15. **Thornton D.B.**, 2013, *Green accounting and green eyeshades twenty years later*, Critical Perspectives on Accounting, 24 (2013) 438–442.

THE CONCEPT OF CIRCULAR ECONOMY IN FOOD WASTE MANAGEMENT FOR THE PRODUCTION OF ENERGY IN UASB-R

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Abstract
More than 1.3 billion t/y of food are disposed off in landfills. FAO indicated that if Food waste was a country will be the 3rd biggest CO_2 producer after China and USA with more that 3.5-4.2 billion of t equivalence CO_2. Every EU citizen produced approximately 179 kg food waste per year. This paper is focuses on the concept of circular economy and how can we improved the production of biogas from UASB-R (Up-flow anaerobic sludge bed) reactor using food waste. The study was conducted through laboratory scale experiments using different percentages of food waste and sludges (manure, etc). The indicators used to evaluate the performance of the operating efficiency of the anaerobic digester was the amount of biogas produced and the methane content of biogas. The results were encouraging in order to use food waste in existing anaerobic treatment plant and use as a secondary resource for energy recovery purposes through a transition to a circular economy.

Keywords: *food waste, circular economy, waste management, energy production, biogas*

Classification JEL:

1. INTRODUCTION

It is open of question how small island will implement the concept of circular economy nowadays with so many ambitious targets set. Food loss (FL) and food waste (FW) are often used to classify materials intended for human consumption that are subsequently lost, discharged, degraded or contaminated. According to FAO (2011) it is estimated that 35% of food (including supply chain) is generally wasted at the consumer

level. Almost 1.3 billion t of edible foodstuffs (equal to 1/3 of the global food production) are wasted every year. In the past 20 years, up-flow anaerobic sludge blanket (UASB) technology has developed for wastewater treatment (Vlyssides et al., 2009). The UASB reactor is considered desirable in high-strength organic wastewater treatment because of its high biomass concentration and rich microbial diversity (Ghangrekar et al., 2005).

2. PAPER BODY

2.1 Methodology

A total quantity of 200 Kg of FW samples were collected from restaurants and stored in -18°C. Each of the following samples was prepared 3 times in a total volume of 3000 lit. Sample A: include 10% FW+ 90% of MSS; Sample B: include 20% FW+ 80% of MSS; Sample C: include 30% FW+ 70% of MSS. In each of those sample (at the beginning of the process and at the end of the process of 28 d) several aprameters were measured.
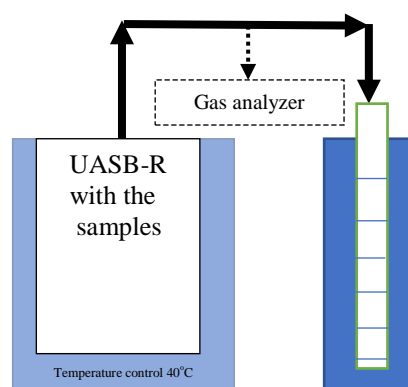
Figure 1. Experimental Procedure

A 5 litre of UASB-R (Fig. 1) was used as digester with the T to be at 40 ^{o}C±1°C. Then a volumetric capacity 2lt cylinder is filled with deionized water to which has been added HCl solution until the pH=2. The graduated cylinder of 1lt placed upside down inside the cylinder volumetric capacity 2lt. The rubber tube from the glass bottle capacity 5lt ends in a measuring cylinder capacity of 1lt. During biogas collection, the graduated cylinder capacity 1lt raised and the recording of the dispute shows the volume level of the biogas produced. A Gas analyser was used on line in order to defined the quality of the produced biogas.

2.2 Results and Discussion

The concentration of CH_4 in biogas was higher in sample A than in sample B and C while the concentration of CO_2 in biogas was higher in sample C due to the fact that FW is in higher concentration and decomposed more than in Sample A. pH was in the range of 7-7.9 for A, 6.4-6.9 for B and 6-6.5 for C. Sample A which contain 10% of FW produced the highest total amount of biogas equal to 20650 ml than sample B and C with 8140 ml and 8300 ml respectively.

3. CONCLUSIONS

Anaerobic digestion of pork manure, sludges and FW has been suggested in the study of Zhang et al. (2011), as a favorable combination of substrates with considerable potential biogas production. The experimental results support that divert FW fraction of municipal waste to anaerobic digestion processes can form part of strategic actions for

achieving the objectives arising from the directives of the European Union 2008/98 for waste and Directive 1999/31 on the landfill of waste.

REFERENCES

FAO, (2011), Global Food Losses and Food Waste: Extent, Causes and Prevention. Food and Agriculture Organization of the United Nations, Rome.

Ghangrekar M.M., Asolekar S.R., Joshi S.G. (2005), Characteristics of sludge developed under different loading conditions during UASB reactor start-up and granulation, *Water Res,* **39(6)**, 1123–1133.

Vlyssides A., Barampouti M.E., Mai S. (2009), Influence of ferrous iron on the granularity of a UASB reactor, *Chemical Engineering Journal*, 146, 49–56

Zhang L., Lee Y.W., Jahng D. (2011), Anaerobic co-digestion of food waste and piggery wastewater: Focusing on the role of trace elements, *Bioresource Technology*, **102**, 5048–5059

TOWARDS A USE OF GINI COEFFICIENTS IN MEASURING SUSTAINABLE DEVELOPMENT – A CASE STUDY FOR 10 EUROPEAN COUNTRIES

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Abstract

Measuring sustainable development in contemporary economies represents a great challenge in context of the new policy adjustments and approaches. Achieving sustainable economic development is more than increasing the values of the classical indicators used for measure the economic stability and economic policy fulfillment goals. Starting from the assumption that an economy not always develops sustainable mechanisms in achieving wellbeing, welfare and economic growth, the study will presents an over view of some possible indicators in measuring sustainable development form a different perspective than the classical approach. For caring out this study it will be employed the Gini coefficient because it is easier in use and offers a very accurate image of the content. From this perspective, Gini coefficient is quite intuitive based on usage of Lorenz curve and it quantifies properly the differences. In this context it will be used as variables: GDP, ecological footprint, water footprint, carbon footprint, HDI and ECI in order to identify possible correlation between their values and the sustainable development of 10 European countries. The analysis of these indicators may revile multi-objective combinations and inter correlations among countries and variables. Several tools for footprint(s)' evaluation is also used in the studies. The results will prove that GDP could be considered an obsolete indicator in measuring sustainable development and it needs to be complete in analysis with other complementary indicators.

Keywords: sustainable development, water footprint, carbon footprint, IDU, GCI.

ROMANIA: WIND ENERGY, MYTH OR REALITY?

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Abstract
In 2010, Romania ranked seventh in terms of wind projects with 448 MW, all in Dobrogea. 448 MW can power a year, only green energy, more than 400,000 households with an average consumption of 200 kWh per month. Basically, the wind is the only area in which Romania can be said to have performed better than Poland or Austria.
Years ago, businesses wind seemed to be what had been real estate. Hardly a week goes by without an energy investor or a businessman in various fields to announce new plans or wind projects. Most remained in diapers, but serious projects going forward. A wind passed from myth to reality?
Wind energy is one of the few areas in which investment last year a record, the money being allocated by giant energy groups, as is the case CEZ or Italians from Enel.
If we compare energy strategies by States projects power plants, hydroelectric or nuclear reactors that are to come and wind, finally wins the race course.

WIN - WIN IN THE ECOMENICS DIMENSION

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Abstract: *In this article, the authors want to bring about the "win - win" principle of the present accepted and widespread global business ethics in relation with a new economic doctrine, the Ecomenics[1]. They are preoccupied with finding a new economic philosophy proper to respond to the challenges of the XXI century, developing this theme also in another paper [Bradu, Alexandru, Taşnadi, 2015, passim].*

This new „ecumenical" dimension in the holistic sphere of economy, i.e. "ecomeny", is trying to find a purpose with common objectives for all economic actors, regardless of the economic doctrine they adhere to, keeping in mind the new global challenges. This holistic attitude in economy is inspired by the present events that are to be found in the spiritual dimension, in which the great religions of the world have found means of communication, moments of sharing of social or economic projects, having a well defined common goal, i.e. that of peace, of ecology and more recently, the stopping of terrorism. Nevertheless, this purpose should not be foreign the scientific economic environment as refugee crises, the manifestation of terrorism, armed conflicts in the third world countries, are also subterfuges of various economic outlooks of the developed countries.

Key words: *ecomenics, win-win, economic doctrine, spiritual dimension, economic environment.*

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[1] Concept that is trying to shape a new Economic doctrine, created by P.C. Bradu with S.V. Petre, discussed in an article named „*From Economics to Oekomeniks: Searching for a new worldly philosophy in the XXI century*", published in the Volume of he International Conference CCI4 (Communication, Background, Interdisciplinarity), Tg. Mureş, 2016, pp. 233-243, http://upm.ro/cci/CCI-04/CCI04-Soc.pdf .

STUDY ON ENVIRONMENTAL POLICIES AND STRATEGIES IMPLEMENTED IN OIL AND GAS INDUSTRY

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Abstract:
Why is the study important? Pollution is one of the great problems facing present days. Environment protection is one of the biggest challenges that mankind is facing with. Oil and gas industry is among the industries with a high share in environmental pollution. This negative consequence occurs in all regions and oil companies, but its size is variable, depending on the technologies used and compliance with environmental regulations in effect. Companies operating in this industry must constantly seek innovative solutions that lead to a situation of mutual benefit between company, society and environment. Studying the impact of environmental policies and strategies implemented in the oil and gas industry, should help us understand their importance in our lives and environment and set an example for other fields.

Keywords: pollution, environment, strategies, politics, impact.

THE CONSIDERATIONS CONCERNING OF RADIOACTIVITY AND THERAPEUTIC APPLICATIONS OF THE NATURAL WATERS

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Abstract

The presence of radioactive elements in the groundwater as well as all other chemical components is due to the interaction of the water with the rocks with who it comes into contact. At the dissolution of the radioactive components also has different special factors, which usually changes the balance determined by the solubilities of these components. The concentration of radioactive elements in natural waters depends on the water contact time with the radioactive ore, the radioisotope concentration in the deposit, the structure and character of the rock pore system. The analysis of the radioisotope composition can be useful in discovering the geochemical relationships of the rocks from which it spring the natural waters. Natural radioactivity caused by the presence of radioactive salts of potassium, uranium, thorium, etc. it is usually low and does not pose any danger to the population who uses this water. The water can get artificial radioactivity due to its pollution with radioactive substances used today increasingly in the industry, medicine, various scientific research or for military purposes. The water pollution can be achieved either by spillage of liquid or solid residues, which contain different radionuclides, as well as by radioactive fall, as a result of atmospheric contamination. This fact emphasizes the importance of delimitation and observance of protective perimeters the drinking water springs and the therapeutic minerals, in accordance with legal regulations. The radioactive mineral waters can be used for therapeutic purposes.The pathological effects produced by radioactive elements varies with the nature of the radiation emitted with their energy, with dose and dose rate and with radiosensitivity of the organism concerned. Some of the radio-elements may have a general diffusion in the body, others a selective localization, concentrating in a certain organs. The higher of the biological activity of a radiation form, with the lower the dose necessary to obtain a suitable therapeutic effect.

KEYWORDS: radioactivity, water pollution, therapeutic applications

THE TOXIC POTENTIAL OF NITRITES AND NITRATES FROM WATER AND FOOD ON THE HUMAN ORGANISM

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Abstract

The human body through drinking water consumed daily, benefiting from the chemical elements present in the water to help maintain health. Food hygiene wants to create awareness and highlighting the favorable effects of nutrition on health and mitigate or remove risk factors foods become harmful to consumers. The exogenous input of nitrates for the human body is drinking water and food, especially those of vegetable origin and meat preparations. According to recent statistics of OMS there is a tendency of increasing content of nitrates in surface waters and groundwater, especially in countries that practice intensive agriculture. Nitrates become toxic by reducing them to nitrites that once penetrate into the blood it is combined with hemoglobin and forming methemoglobin. As a consequence occures the color change of the mucous membranes in brown-gray, appears the reduction of the oxygen fixation capacity and the decrease of the tissue respiration. The disease is found almost exclusively in infants in the first year of life when are fed artificially. The cyanosis becomes perceptible when methemoglobin exceeds 10% of total hemoglobin, and other signs such as headache, tachycardia, asthenia occur in over 20%. In the digestive tract, nitrates and nitrites disrupt the metabolic processes of B1, B6, A and beta carotene.
Another very serious negative effect from a medical-sanitary point of view is the interaction of nitrite with the secondary and tertiary amines in the body. Amines derived from food or amino acid desmolysis are coupled with nitrites in acidic medium to form nitrosamines. Nitrozamins are chemical combinations with a mutagenic effect in the body and lead by cumulation to the occurrence of various forms of cancer.

KEYWORDS: nitrites, toxic, water, food, human organism

CLEAN ENERGY FOR SUSTAINABLE DEVELOPMENT IN ROMANIA'S ECONOMY

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Abstract:

In terms of Sustainable Development Goals (SDGs) to be attained by each country till the end of the year 2030, the SDC7, "Affordable and clean energy", at the level of 2015 for Romania, registered the following results: access to electricity is 100%; access to non-solid fuels is 82.8%; CO_2 from fuels and electricity is 1.2 $MtCO_2/TWh$; and renewable energy in final consumption is not reported. Based on these facts, this study examines the need to reach "clean energy goal" in Romania, in relation to the economic activity and demographic changes. The data used are the main energy indicators (the CO2 emissions, the greenhouse gas emissions - GGE, the renewable energy consumption and the consumption of biofuel), the intensity of energy in economy (the economic activity), and the population number. The methodology consists of quantitative analysis, applying the EViews program. The results interpretation will take into account that Romania has to continue to reduce the intensity of energy, by increasing the energy efficiency, modernization of technology, and restructure of the economy.

Keywords: *clean energy, sustainable development, economic development, demographic factors, quantitative methods*

THE RISE OF SOCIALLY RESPONSIBLE INVESTING: PROFIT VERSUS PLANET

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Abstract
Socially responsible investing, also known as sustainable investing, ethical investing or green investing, is an investment strategy that considers together financial returns and environmental, social and governance factors to generate long-term positive societal impact. Individual and institutional investors are becoming ever more aware of the importance of ESG criteria in creating value for both the companies and society.
The objective of this research paper is to examine the relevance of ESG ratings for socially responsible investing investment decisions and to identify the dynamics among the market participants. According to the latest data from The Forum for Sustainable and Responsible Investment, there is nearly $7 trillion investing in ESG strategies only in the United States, which is up from $4.3 trillion in 2014, and up from $202 billion in 2007.
The results of the research could identify an increasing attention of market participants for sustainable investment strategies over the last 5 years. This study, along with the increasing number of other studies, will raise awareness on socially responsible investing and will contribute to a better understanding of its impact on financial markets.

Keywords: Socially responsible investing, ESG factors, Green investing, Market value, Investment decisions

JEL Classification: G11, G12, Q01, Q56

MAINSTREAMING THE CULTURE OF ECO-INDUSTRIAL PARKS (EIPS) IN KENYA FOR THE SUSTAINABLE REALIZATION OF THE COUNTRY'S VISION 2030

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Abstract

Competitive and productive Special Economic Zones (SEZs)/ industrial Parks (IPs) of the future will be those that will abandon the wasteful linear development model and instead embrace a circular economy that is characterized with the circular flow of materials and energy. Doing this will not only lower pressure on the use of the country's virgin raw materials but also contribute to the reduced carbon footprint of the SEZs/IPs by diverting wastes from the landfill. This paper investigated the spontaneous evolution of waste and by-product exchange at the agro-processing and garment clusters of the Athi River SEZ. These cluster based material exchanges evolved on their own largely as a result of the prevailing forces of material supply and demand. Though at its infancy, the emergency of industrial symbiosis at the economic zone has helped to demonstrate the social inclusion dimension of green growth through the creation of decent green jobs. The practice has also enabled participating firms to reduce their GHG emissions and lower their operational costs. The economic zone's desire to fully embrace waste recovery, reuse and recycling as part of its deliberate efforts of advancing the ideals of a circular economy is currently being hampered by a lack of a functional waste recovery, reuse, and recycling infrastructure. The proposed strengthening of University-Industry-Government (U-I-G) collaboration at the Athi River SEZ, will help promote eco-innovation that forms the cornerstone of the economic zone's improved productivity and competitiveness. The paper sought to unravel what needs to be done so as to accelerate the transformation of the country's economic zones into environmentally friendly Eco-Industrial Parks (EIPs) capable of attracting green foreign direct investments (FDIs). The paper also tackles the barriers that need to be overcome so that the country's SEZs/ IPs can adopt a development trajectory that enjoys low-emission levels, efficiently uses its resources, and is socially inclusive through the creation of decent green jobs.

Key Words: *Competitiveness, linear development model, circular economy, carbon footprint, industrial symbiosis, eco-industrial parks*

SUSTAINABLE DEVELOPMENT THROUGH INNOVATION

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Abstract:

The Romanian National Strategy of Sustainable Development follows concrete objectives focused on: scientific research, technological development and innovation. International scientific literature within the field underlines the strong connection between innovation indicators and economic growth in European Union countries. This research study focuses on the connection between innovation and economic growth, by using a single country analysis. The results will emphasize the importance of sustainable development policies in developing countries, taking as example Romania.

Keywords: *sustainable development, developing countries, economic growth, innovation, Romanian economy.*

THE CONTRIBUTION OF THE BIKE SHARING SYSTEM TO A GREEN ECONOMY

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Abstract:
Concerns about climate change have led to increased interest in sustainable transport alternatives, such as bike sharing. There are several studies that have shown environmental and social effects of bike sharing, including reduced car use, increased use of bicycles and raising awareness of mobility as an option bike sharing daily. Other research shows the limits in the development of bike sharing: limited infrastructure for bicycles, difficult integration of public transport systems, technology costs and user convenience and safety. The bicycle is considered a vehicle that has several advantages: an ecological and economical means of transportation, a way to keep us fit and healthy and enjoyable social activity. The negative consequences of intense use of the private car are already visible in large cities and densely populated. Although, there is a long history of use of the bike in different parts of the world, which offer great potential for such a green form of travel. Research shows that the implementation of bike sharing systems have varying degrees of success.

Bike-sharing systems are becoming increasingly popular around the world and reduce the perception that cycling is a risky sport or just for sports people. Goodman (2014) compared the use of specialist cycling clothing between users of the London bicycle sharing system and cyclists using personal bicycles. Bike-sharing systems encourage cycling directly, by providing bicycles for rent, but also indirectly by increasing the diversity of models of cyclists. Several cities have implemented bike sharing systems, but there is a few research to investigate the contribution of these systems to the green economy. Murphy & Usher (2012) analysed the impact of a scheme in Dublin, Ireland and showed that the scheme is used predominantly by higher-income individuals, it has a different functionality during the peak and off-peak and has been indirectly successful at improving driver awareness towards cyclists.

This research examines the relationship between bike sharing schemes implemented and gross added value in five different cities of Romania for a period of 5 years, applying a statistical methodology based on regression analysis. The research is supplemented by a qualitative analysis based on interviews with 10 stakeholders, using the software NVivo 11. The main findings show that the bike sharing system have a contribution to the gross added value but there are factors that hinder this contribution such as: the lack of public policy or public infrastructure, the low levels of living standards of the population and public awareness programs on the use of bicycles. The involvement of local authorities in supporting bike sharing system plays a fundamental role in their evolution. In terms of legislation, in Romania, cycling face several hurdles: the infrastructure is poor in many areas and bicycles tracks or lanes are missing or inadequate.

The cycling is essentially a safe activity; however, some reports show that safety fears about traffic contribute to a widespread perception that cycling is a dangerous activity, which creates major obstacles to the adoption of the bicycle as a mode of transport. Ensuring a safe and attractive cycling infrastructure is the key to unlocking this potential. The number of cyclists is expected to increase with an improvement of the

infrastructure. In this regard, several recommendations can be made, such as creating safe bike infrastructure for parking around transit stations and making bicycle lanes more attractive. Investing in bike infrastructure, will increase the number of people who choose cycling as a means of transport to work and has a higher return on investment in terms of public health, environmental and social benefits.

REFERENCES

1. Dill, J., Carr, T., (2014). Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them, Commuters Will Use Them, Transportation Research Record: Journal of the Transportation Research Board, 2014m Vol 1828, http://dx.doi.org/10.3141/1828-14;

2. Gatersleben, B., Appleton, K.M., (2007). Contemplating cycling to work: Attitudes and perceptions in different stages of change, Transportation Research Part A: Policy and Practice, Volume 41, Issue 4, May 2007, Pages 302-312, ISSN 0965-8564, http://dx.doi.org/10.1016/j.tra.2006.09.002.
(http://www.sciencedirect.com/science/article/pii/S0965856406001091);

3. Heinen, E., Van Wee, B., and Maat, K., (2010). Commuting by Bicycle: An Overview of the Literature Transport Reviews, Vol. 30, Iss. 1,2010;

4. Hull, A., (2005). Integrated transport planning in the UK: From concept to reality, Journal of Transport Geography, Volume 13, Issue 4, December 2005, Pages 318-328, ISSN 0966-6923, http://dx.doi.org/10.1016/j.jtrangeo.2004.12.002. (http://www.sciencedirect.com/science/article/pii/S0966692305000062);

5. Hunt, J.D. & Abraham, J.E. (2007), Influences on bicycle use, Transportation (2007) 34: 453. doi:10.1007/s11116-006-9109-1;

6. Martens, M., (2007). Promoting bike-and-ride: The Dutch experience, Transportation Research Part A: Policy and Practice, Volume 41, Issue 4, May 2007, Pages 326-338, ISSN 0965-8564, http://dx.doi.org/10.1016/j.tra.2006.09.010. (http://www.sciencedirect.com/science/article/pii/S096585640600111X);

7. Nankervis, M., (1999). The effect of weather and climate on bicycle commuting, Transportation Research Part A: Policy and Practice, Volume 33, Issue 6, August 1999, Pages 417-431, ISSN 0965-8564, http://dx.doi.org/10.1016/S0965-8564(98)00022-6. (http://www.sciencedirect.com/science/article/pii/S0965856498000226);

8. Noland, R.B., Kunreuther, H., (1995) Short-run and long-run policies for increasing bicycle transportation for daily commuter trips, Transport Policy, Volume 2, Issue 1, January 1995, Pages 67-79, ISSN 0967-070X, http://dx.doi.org/10.1016/0967-070X(95)93248-W.
(http://www.sciencedirect.com/science/article/pii/0967070X9593248W;

9. Parkin, J., Wardman, M. & Page, M. (2008). Estimation of the determinants of bicycle mode share for the journey to work using census data, Transportation (2008) 35: 93. doi:10.1007/s11116-007-9137-5

10. Pucher J., Buehler, R. (2008). <u>Making Cycling Irresistible: Lessons from The Netherlands, Denmark and Germany</u>, Transport Reviews Vol. 28, Iss. 4,2008;

11. Pucher, J., Dill, J., Handy, S., (2010). Infrastructure, programs, and policies to increase bicycling: An international review, Preventive Medicine, Volume 50, Supplement, January 2010, Pages S106-S125, ISSN 0091-7435, http://dx.doi.org/10.1016/j.ypmed.2009.07.028. (http://www.sciencedirect.com/science/article/pii/S0091743509004344)

12. Pucher, J., Komanoff, C., Schimek,P. (1999). Bicycling renaissance in North America? Recent trends and alternative policies to promote bicycling, Transportation Research Part A: Policy and Practice, Volume 33, Issues 7–8, September–November 1999, Pages 625-654, ISSN 0965-8564, http://dx.doi.org/10.1016/S0965-8564(99)00010-5. (http://www.sciencedirect.com/science/article/pii/S0965856499000105);

13. Rietveld, P., Daniel, V. (2004). Determinants of bicycle use: do municipal policies matter?, Transportation Research Part A: Policy and Practice, Volume 38, Issue 7, August 2004, Pages 531-550, ISSN 0965-8564, http://dx.doi.org/10.1016/j.tra.2004.05.003. (http://www.sciencedirect.com/science/article/pii/S0965856404000382)

14. Shaheen, S., Guzman, S., Zhang, H., Bikesharing in Europe, the Americas, and Asia Past, Present, and Future Transportation Research Record: Journal of the Transportation Research Board, Volume 2143 DOI: http://dx.doi.org/10.3141/2143-20

15. Tilahun, N.Y., Levinson, D.M., Krizek, K.J. (2007).Trails, lanes, or traffic: Valuing bicycle facilities with an adaptive stated preference survey, Transportation Research Part A: Policy and Practice, Volume 41, Issue 4, May 2007, Pages 287-301, ISSN 0965-8564, http://dx.doi.org/10.1016/j.tra.2006.09.007. (http://www.sciencedirect.com/science/article/pii/S096585640600108X;

16. Wardman, M., Tight, M., Page, M., (2007). Factors influencing the propensity to cycle to work, Transportation Research Part A: Policy and Practice, Volume 41, Issue 4, May 2007, Pages 339-350, ISSN 0965-8564, http://dx.doi.org/10.1016/j.tra.2006.09.011. (http://www.sciencedirect.com/science/article/pii/S0965856406001212)

17. Zhang,L., Zhang,J., Duan, Z., Bryde,D. (2015). Sustainable bike-sharing systems: characteristics and commonalities across cases in urban China, Journal of Cleaner Production, Volume 97, 15 June 2015, Pages 124-133, ISSN 0959-6526, http://dx.doi.org/10.1016/j.jclepro.2014.04.006. (http://www.sciencedirect.com/science/article/pii/S0959652614003448)

18. Goodman, A, Green, J., Woodcock, J., (2014). The role of bicycle sharing systems in normalising the image of cycling: An observational study of London cyclists, Journal of Transport & Health, Volume 1, Issue 1, March 2014, Pages 5-8, ISSN 2214-1405, http://dx.doi.org/10.1016/j.jth.2013.07.001. (http://www.sciencedirect.com/science/article/pii/S2214140513000030)

TESTING THE IMPACT OF ENVIRONMENTAL TAXES ON GREENHOUSE GAS EMISSIONS IN EU MEMBER STATES

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Abstract

The paper shows the environmental taxes evolution during the last decade, from 2006 to 2015, for the European Union Member States. In the first part of the paper we presented briefly the evolution of green taxes since their appearance to the present, including an analysis related to the contribution of revenues from this type of taxes to the national budget for each country in the European Union. In the second part we tested the impact of the taxes on energy on thegreenhouse gas emissions using the linear regression with fixed effects. The results of the analysis reveals the double benefit of environmental taxes: on the one hand increase revenues to the state budget and on the other hand protects the environment.

PROFITABILITY OF TRADABLE PERMITS

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Abstract

The paper presents aspects of emissions trading and profitability of tradable permits. In recent years, the world was manifested a growing interest for their research, the occurrence of negative effects which manifested environmental pollution on humans, economy, society, nature. The concept and idea of tradable permits is based in principle on the allocation of the actual costs of production. The basic reason for which pollution permits have become transmissible (negotiable), so they can be marketed, is quite simple: usually plants have very different levels of emission control costs. Given that permits may be transferable factories that can control the simplest and most advantageous emissions from its own activities, considered to be in their interest directly control - a high percentage - emissions because they could just sell excess permits. In respect of buyers, they can be found whenever they deemed it more convenient to buy permits for their subsequent use in a particular factory that installs multiple control equipment. This is a form of allocating responsibility in controlling emissions. If the allocation of emission control responsibility not prove to be cost effective, there are other opportunities for marketing. When all these opportunities are fully exploited, it is considered that the allocation is profitable.

SUSTAINABLE CITIES - EU TARGET IN TERMS OF AGENDA 2030 SUSTAINABLE DEVELOPMENT

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Abstract:

Europe faces new economic, social and political challenges. Starting from the sustainable development goals of the United Nations, approved in September 2015, Europe is promoting since 2017, a socio-economic model of sustainable development, comprising 17 priorities (Sustainable Developments Goals- SDG) as part of the EU's political agenda .Sustainable development is a fundamental objective of the European Union , as stated in Article 3 of the Treaty of UE. The 17 EU priorities relates to poverty, health and welfare, quality of education, gender equality, clean water, energy, economic growth , industry, infrastructure, , responsible consumption and sustainable cities and communities. This last priority is taking into account the concentration of particulate matter, municipal waste and level of difficulty in accessing public transport. In 2014, the EU population exposure to particulate matter was 22.5 mg / m3 (PM10). During 2004 - 2014 this indicator decreased by 21.6%. In 2014 43.5% of EU municipal waste was recycled, representing a significant increase from 23.2% in 2000. Nearly 75% of municipal waste recycled by the Member States are below the EU average. Statistics show that 20.4% of the European population has difficulty in accessing high or very high transport public.

Keywords: sustainable development,2030 Agenda, particulate matter, municipal waste, public transport.

JEL Classification : O52, Q01, Q 56.

EUROPE 2020 PRIORITIES – ROMANIA'S RATIO ANALYSIS

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Abstract
The Europe 2020 Strategy was created in 2010 for smart, sustainable growth of Member States. This strategy is based on the European Semester, which become a powerful tool in supporting structural reforms and fiscal policies of member states.
To achieve these objectives, the EU adopted a series of indicators to be achieved in 2020: employment, research and development, climate change and energy, education, poverty and social exclusion. These priorities have been transferred into national targets to reflect the situation of each Member State and the possibility of contributing to their achievement at European level.
Romania has different levels than the European average for all indicators. Between 2008 - 2014 Romania has reached a single national indicator (risk of poverty and social exclusion), with levels close to the EU average for the reusable energy in total energy consumption (24.9% compared to the target of 24%), or tertiary education attainment (25.6% in 2015 compared to the proposed 26.7%).
At the same time, research and development decreased by 0.19 percentage points between 2008 and 2014, Romania is the country with the largest gap with the national target.

Keywords: sustainable growth, strategy, Europe 2020, indicators

JEL Classification: F01, F63, O52, R11.

GREEN PROCURMENT FOR A GREEN ECONOMY

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Abstract:
Legal framework for green procurement stipulates the means for the use of environmental considerations when developing the criteria for the award and performance of contracts. In Europe, developing the tools for implementing green procurement has been favored by consumer awareness of environmental issues, while businesses have realized the economic benefits of using clean technologies. In Romania legal framework for green procurement prerequisites the criteria for taking into account the environmental issues. This paper aims to analyze the current situation and developed qualification and selection criteria required in different phases of the procurement process.

Keywords: *green economy, green procurement, environment, ecological criteria, sustainable development*

INTEGRATING THE ECOLOGICAL PACKAGING CONCEPT IN SUSTAINABLE DEVELOPMENT

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Abstract:

As a country member of the European Union, Romania's legal framework is complying with packaging waste management European framework , thus provides prerequisites for achieving a sustainable environment regarding recycling. State experience demonstrated effectiveness for reducing the environmental impact by integration of packaging concept in natural capital system. The paper, starts with evaluation of classic and ecological packaging concept, therefore will be developed a series of matrices, care to support relationships between functions and characteristics of the packaging, and natural capital, thus intersection of these ratios to prioritize steps to be followed in adopting the ecological packaging in marketing systems. Once integrated the ecological packaging concept toward society will lead to the achievement of sustainability production.

Keywords: *ecological packaging, environment, recycling, sustainable development, consumers*

SESSION 2
TOURISM SERVICES AND MANAGEMENT FOR SUSTAINABLE DEVELOPMENT

PROFESSIONALISM IN HUMAN RESOURCES MANAGEMENT – A PREREQUISITE FOR ORGANIZATIONAL PERFORMANCE

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Abstract

This paper refers to the professionalism of human resources management. Starting from the idea that, human resources specialists are responsible for a number of activities within organizations, it is necessary that they possess the knowledge and skills required to perform them. HR specialists must be able to apply the principles and practices of human resources to add to the success of their organizations. Beyond these requirements, a specialist in human resources must also be efficient on ethical, communication, consultancy, critical evaluation issues etc. Moreover, the article describes the range of skill that human resources specialists should possess. In addition, nowadays it is a must for human resources specialists to assume certain roles to efficiently perform the activities related to the human resources management.

Keywords: human resources management, human resources professionals, profession, skills, knowledge.

*JEL Classification***:** J44; M12; M53; M54.

1. INTRODUCTION

In recent years, a number of specialists in the field of human resource management have demonstrated its impact on the organizational performance. Human resources management performance within organizations largely depends on the professionalism of those working in this field. In order to achieve an efficient management of human resources at the organizational level, it is important for those who manage this area and carry out activities related thereto possess the necessary professional skills. Or, the skills in the field of human resources can be acquired through relevant studies and lifelong professional development. Developing a wider range of activities related to human resources management, extends also the area of skills competence of human resources managers and professionals. In recent decades, the activities in the field of human resource management have become more popular, being metamorphosed into a profession of great importance for the organization.

Regardless of the position held within the human resources subdivision, HR experts must have an initial training in order to perform their tasks and duties related to this field of work. For example, in France, initial training has become an essential criterion for employment in human resources subdivision [5].

Unfortunately, this fact is not valid for organizations in the Republic of Moldova. Being considered as a secondary function within the organization, employees of the HR subdivision were employed at random, without having the necessary knowledge and skills to manage a very important area of the organization. This may be caused by the fact that, over time, specific activities of human resource management within local organizations were more related to legal and regulatory issues.

Taking into account the development of competitive economy and appearance of several foreign companies on domestic market, that have come up with new strategies, policies and personnel procedures in recent years, many local organizations started to reshape the human resources management. Thus, the specific activities of human resource management are changing or have already passed from traditional personal problems, considering the normative, methodological and legal issues of personnel management, to those that are specific to proper management of human resources. Under these circumstances, personnel subdivisions are required to continuously improve human resource management system and identify new forms of interrelations with organizational subdivisions managers, as well as with trade union representatives of the unionized organizations.

2. PAPER BODY

Professionalization of human resources management was the topic of discussion and research for many specialists in the field, starting from the idea that the activities related to this field can be enframed in a profession. The person exercising the profession must demonstrate certain skills based on theoretical knowledge. At the same time, in 1972 the Hayes Committee stated that a professional is distinguished by the fact that he uses a framework of fundamental concepts co-related with experience [1].

According to a different approach, profession is considered under an ethical aspect, i.e. a professional supposedly exists to serve the others. This creates confusion when it comes to human resources professionals. In this context, Tyson and Fell noted that the human resources manager is encouraged to treat the execution manager as a client, but at the same time try to be the representative of wider social norms and be at the service of employees [1].

Research is an important element in the training of human resources professionals. Thus, Boxall and Burch (2007) stated that higher education in the field of human resource management is important for the efficient execution of roles in the profession. But, according to them, it is essential to gain experience needed to improve skills and personal development [9].

Research regarding the necessary knowledge, skills and behaviors for human resources professionals started in the 70s of XX century and continues to this day. Thus, we highlight the contributions made by Borman Heneman, Burack, Wallace, Ulrich, Brockbank etc. in terms of human resource management professionalization. Interest in human resource professionals is determined by the fact that they are concerned namely with planning and coordination of human resources management. First, the level of perception and implementation of human resource management activities depends on the level of knowledge and professional skills of those working in the human resources subdivision. Secondly, the level of efficiency in the process of assisting functional subdivisions managers on recruitment, selection, training, performance evaluation, etc., depends on the professional training of human resources managers and specialists.

HR professionals are grouped into two categories: generalists and specialists. Generalists are people who are concerned with general and strategic issues regarding human resources, occupying usually positions of HR managers. Specialists are people

doing work tasks and take responsibility for a particular area of human resources management. Both, in case of generalists and specialists, professional studies in the field of human resources management are needed for the efficient execution of their activities. However, the CIPD of UK considers that the HR professionals are "performers who think" because they have to think carefully at what they do in their organization and in the framework of a recognized set of theoretical knowledge. They also must be efficient in carrying out their duties by providing recommendations and services that would help the organization in achieving its strategic objectives [1].

The diversity of tasks assigned to human resources managers and specialists requires the elaboration of a framework of skills to be used as a guideline in their professional activity. Professional skills needed to those working in human resources subdivision may be acquired during their studies, but also during professional activity. However, the level of professional skills depends on the position held. In case of a managerial position a set of skills is necessary and in case of an executory position other skills are required. There are several approaches in literature regarding the professional skills of human resources. Brockbank and Ulrich (2003) define the professional competence of human resources as the ability to create added value for the organization and its ability to focus on the development and change of the organization in order to achieve sustainable competitive advantage. The model developed by Brockbank and Ulrich groups the competencies of HR professionals into five categories: strategic contribution, business knowledge, personal credibility, services related to human resources and set of processes, methods and techniques of human resources [16].

More recently, Ulrich, Younger, Brockbank, and Ulrich (2013) identified six groups of HR competencies, including strategic positioner, credible activist, capability builder, change champion, human resource innovator and integrator, and technology proponent [15].

Another study, conducted on 300 human resource practitioners working in different sectors of economy, has identified a set of core competencies for HR professionals. These relate to: leadership style, managerial intuition, functional capabilities and personal attributes [8]. However, Buyens and de Vos (1999) suggest the following basic skills required of HR managers for doing business in an international environment: interpersonal and intercultural skills, ability to learn about foreign cultures, local accountability, transnational flexibility, change and diversity management, ability to work in international teams, coaching and worldwide development [4]. Another approach regarding the professional skills of human resources groups them into two categories: strategic and functional [7]. Strategic skills of human resource are related to the business enabling HR professionals to connect personnel strategies to the organizational strategy. According to M. Armstrong, HR professionals need strategic skills in order to involve in the process of developing the human resources strategy, as part of organizational strategy, but also sectorial strategies of human resources.

In turn, the functional skills in human resources allow the fulfilment of concrete activities – recruitment, selection, professional training, performance evaluation etc. [10]

D. Ulrich et al highlight the four roles of HR professionals: strategic partner, organizational evaluator, leader of employees and promoter of changes. According to them, the role of strategic partner assumes that the activities and responsibilities of professional human resources must be interspersed and integrated with those of senior

managers, ensuring its contribution to achieving the strategic objective, having the ability to identify business opportunities and assess the overall situation of the organization [14]. As organizational evaluators, human resource professionals must be involved both in the process of achieving the reengineering of organizational processes and their evaluation. In exercising the role of employee leader, M. Armstrong believes that HR professionals must act as "police" with executive managers, ensuring that implementation of personnel policies and procedures is done in a consistent manner [1]. As a promoter of organizational changes, human resources professionals must not only explain the need for these changes, but to achieve them in the shortest period of time.

3. CONCLUSIONS

Regardless of the roles undertaken by HR professionals, they are obliged to maintain a dividing line between serving the organization that provides a salary and serving individual employees. Therefore, in their professional activity, human resources professionals should be guided by certain ethical standards. First, HR professionals must maintain high standards on information and recommendations offered by managers and employees. Second, HR professionals must demonstrate maximum fairness, when dealing with employee issues.

REFERENCES

[1] Armstrong, M. (2003). Managementul resurselor umane manual practic. Bucureşti: CODECS.

[2] Bîrcă, A. (2015). Redimensionarea managementului resurselor umane în contextul integrării Republicii Moldova în Uniunea Europeană. Chişinău: Editura ASEM.

[3] Boselie, P. and Paauve, J. (2005), "Human resource function competencies in European companies", Personnel Review, Vol. 34 No. 5, pp. 550-566.

[4] Buyens, D. and de Vos, A. (1999), "The added value of HR department", in Brewster, C. and Harris, H. (Eds), International Human Resource Management, Rutledge, London, pp. 32-48.

[5] Cohen-Haegel, A. (2010). Toute la fonction Ressources Humaines 2ème édition. Paris: Dunod.

[6] Coteanu, I., Seche, L., Seche, M. (1998) DEX Dicţionar explicativ al Limbii Române. Bucureşti: Editura Univers Enciclopedic.

[7] Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resources management effectiveness as determinants of firm performance. Academy of Management Journal, 40, 171–188. doi:10.2307/257025

[8] Karen Lo, Keith Macky & Edwina Pio (2015) The HR competency requirements for strategic and functional HR practitioners, The International Journal of Human Resource Management, 26:18, 2308-2328. http://dx.doi.org/10.1080/09585192.2015.1021827 (accessed 15 January 2017)

[9] Kohont, A., Brewster, C. (2014),"The roles and competencies of HR managers in Slovenian multinational companies", Baltic Journal of Management, Vol. 9 Iss 3 pp. 294 – 313. http://dx.doi.org/10.1108/BJM-07-2013-0112 (accessed 05 January

2017)

[10] Pfeffer, G. (2009). Resursele umane în ecuația profitului. București: CODECS.

[11] Schuler, R., Jackson, S. and Storey, J. (2001), "HRM and its link with strategic management", in Storey, J. (Ed.), Human Resource Management – A Critical Text, Thompson Learning, London, pp. 113-130.

[12] Torrington, D., Hall, L. (1998). Human Resource Management. Pretince Hall Europe.

[13] Ulrich, D. (1996), Human Resource Champions – the Agenda for Adding Value and Delivering Results, Harvard Business School Press, Boston, MA.

[14] Ulrich, D. and Brockbank,W. (2005), The HRValue Proposition, Harvard Business Press, Boston,MA.

[15] Ulrich, D., Brockbank, W., Johnson, D. and Younger, J. (2010), Human Resource Competencies – Rising to Meet the Business Challenge, RBL Group, Boston, MA, available at: http://rbl.net/index.php/library/display-content-page/653 (accessed 21 October 2016).

[16] Ulrich, D., Younger, J., Brockbank, W., & Ulrich, M. (2013). The state of the HR profession. Human Resource Management, 52, 457–471.
doi:10.1002/hrm.21536. (accessed 22 October 2016).

THE EVOLUTION IN ENTREPRENEURIAL DIMENSIONS IN TOURISM IN ROMANIA

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Abstract
Tourism is a sector that encourages the creation of new enterprises in order to receive tourists, resulting in the development of other sectors. Small and medium enterprises in the tourism generates significant revenues that contribute to higher levels of development of the local community. Adapting to the competitive environment - in increasingly turbulent - require more flexibility from managers. The external environment of the company have known. External environment acts on several categories of influencing factors, political and legal factors, economic factors, socio-cultural factors and technological factors. Detailed knowledge of all these factors on firm action is particularly useful it helps managers to understand and explain the decisions and behaviors they noted in the company they manage and allows a detailed study of the relationship continues change between the firm and its external environment. This paper makes an analysis of changes in the size enterprises in the field of hotels and restaurants tourism in Romania in the period 2008-2015. The research is based on statistical data taken from the website of the National Statistical Institute. Highlighting changes occurred was done by presenting data in the form of tables and graphs and calculating statistical indicators

Keywords: *active enterprises, class size, legal form, economic factors*

Classification JEL: *L26, Z32, O40*

1. INTRODUCTION

Tourism is a sector that encourages the creation of new enterprises in order to receive tourists, resulting in the development of other sectors. Small and medium enterprises in the tourism generates significant revenues that contribute to higher levels of development of the local community. The tourism sector is remarkably generating of strong currency income and employer has with the ability to spread its economic benefits to every community (Vilayphone, 2010). Tourism contributes to promoting local traditional values, raising awareness of the indigenous population to preserve and capitalize properly authentic lifestyle.

According to some authors of literature analysis should be carried conjuncture taking into account the four main components:components demo sociological nature; components resulting from the mentality and psychology; components resulting from technology, natural sciences and ecology and economic components. Tourism research highlights that although SMEs represent a significant part of the tourism industry, they did not have similar entrepreneurial characteristics of large corporations. (Getz, 2004). While big corporations use corporate governance model in terms of recruitment and mobilization of capital, small businesses rely more social networking and family to support their development (Kuratko, 2009, Jons and Mattsson, 2005).

Among SMEs was often a lack of coaches behavior due to lack qualified labor resources and the marketing. Due to limited resources, these companies rely more on interpersonal marketing. The level of innovation and organizational culture influence the efficiency of the entrepreneurial process but the lack of resources limits the innovative spirit Morrison (2006).

Kuratko (2009) identify three dimensions of entrepreneurial behavior: culture, entrepreneurship and entrepreneur characteristics.Tourism is a concept of economic activity with great impacts on society as it is an instrument of development. Its meaning is to establish the context of the paper. It is made by bringing the specialty literature first (quotations) and by synthesizing the current meaning of the investigated matter. Formulate the goal of the paper under the form of hypotheses, questions or matters treated and explain the approach method and necessary arguments in short. Anytime it is possible, describe the results revealed (proved) by the study.

2. MATERIAL AND METHOD

Identification accuracy the issues involved in the evolution of business enterprises in the tourism sector requires achievement of research from multiple perspectives. The purpose of this research is to analyze changes in the dimensions of tourism enterprises, to anticipate the evolution in the coming period, based on time series taken from the National Statistics Institute website. Highlighting changes occurred was done by presenting data in the form of tables and graphs and calculating statistical indicators.

3. RESULTS AND DISCUSSIONS

According to statistics, was an increase in the number of employees in the hotels and restaurants in Romania in 2010-2013, followed by a decrease in 2014. The decline in 2010 is actually the economic crisis triggered in 2008.
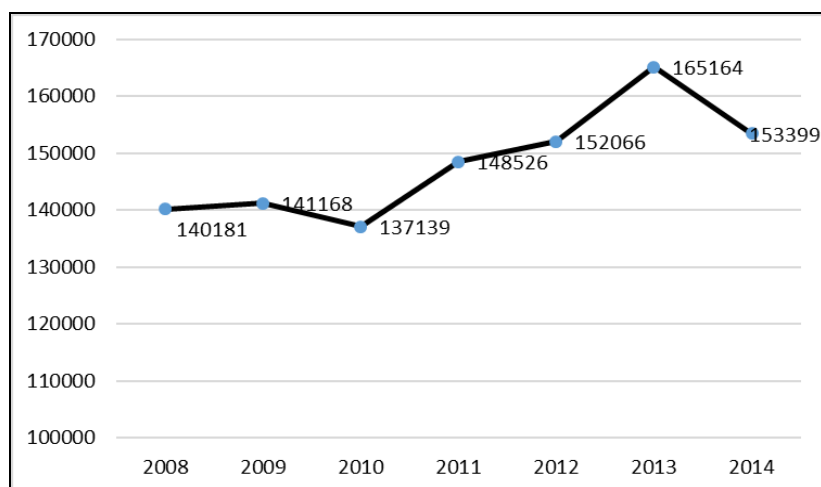
Fig no.1 The number of employees the field of hotels and restaurants

After a significant decline in 2011, the number of enterprises in the hotels and restaurants are putting on an upward trend until 2014. The economic crisis led to a poorer survival rate of companies in the sector hotels and restaurants. So by 2009, the number of active companies decreased until 2012 when a revirement notice.
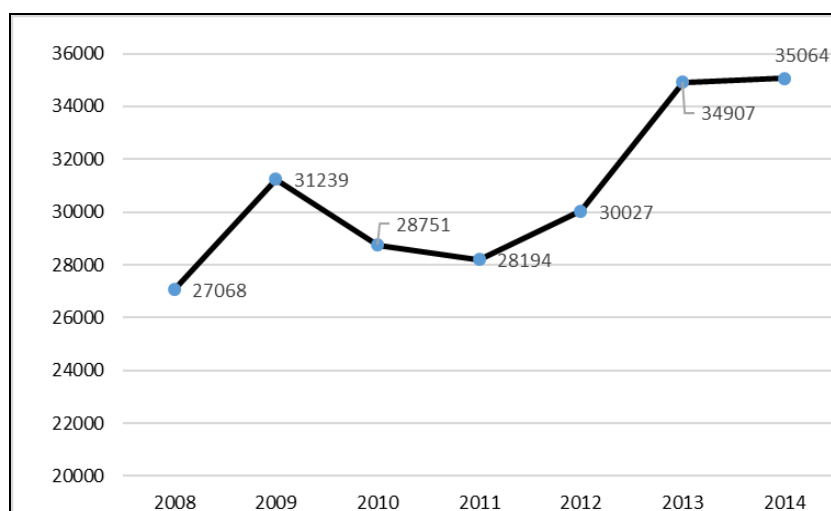
Fig. no.2 The number of active enterprises in the field of hotels and restaurants

Regarding the structure of enterprises by size categories, it emerges, after 2011, increasing the share of enterprises with a total of 10 employees lower. Reducing the share of these companies in 2011 can be explained by lower survival rate for small businesses after the economic crisis, in 2008.

	2008	2009	2010	2011	2012	2013	2014
⊠ 250 persoane si peste	0.09	0.08	0.09	0.11	0.11	0.10	0.11
☐ 50-249 persoane	1.24	0.99	1.02	1.23	1.16	1.09	1.14
■ 10-49 persoane	10.60	10.38	11.04	14.01	13.87	13.68	12.94
⦀ 0-9 persoane	88.07	88.55	87.84	84.65	84.86	85.12	85.81
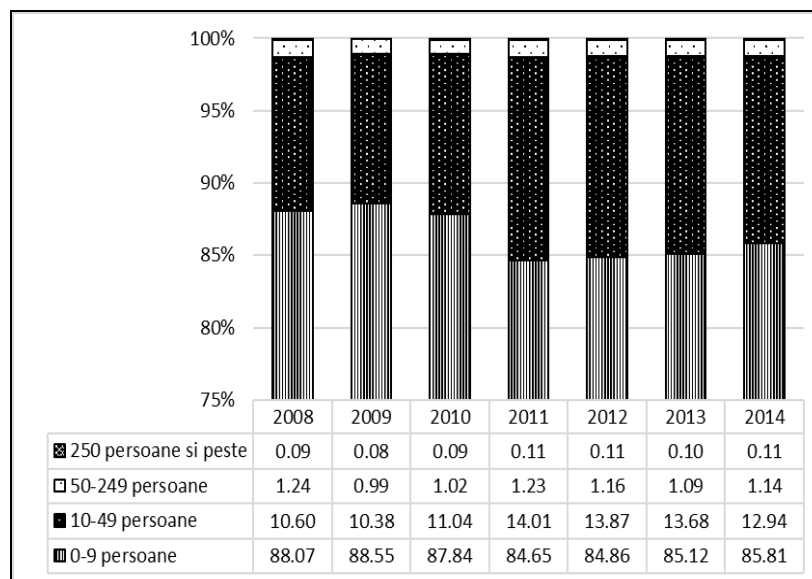
**Fig.no.3 The enterprises active in hotels and restaurants by class size
in Romania, in the period 2010-2014**

Analysis of changes in the number of companies on legal forms emphasizes reducing weight and increasing the share of companies authorized legal entities.

	2008	2009	2010	2011	2012	2013	2014
☐ Companies	86.40	82.81	83.94	77.99	77.52	67.24	67.12
☐ Freelancers	12.68	16.23	15.13	21.22	21.74	32.17	32.32
▦ Other legal forms	0.92	0.97	0.93	0.78	0.75	0.58	0.56
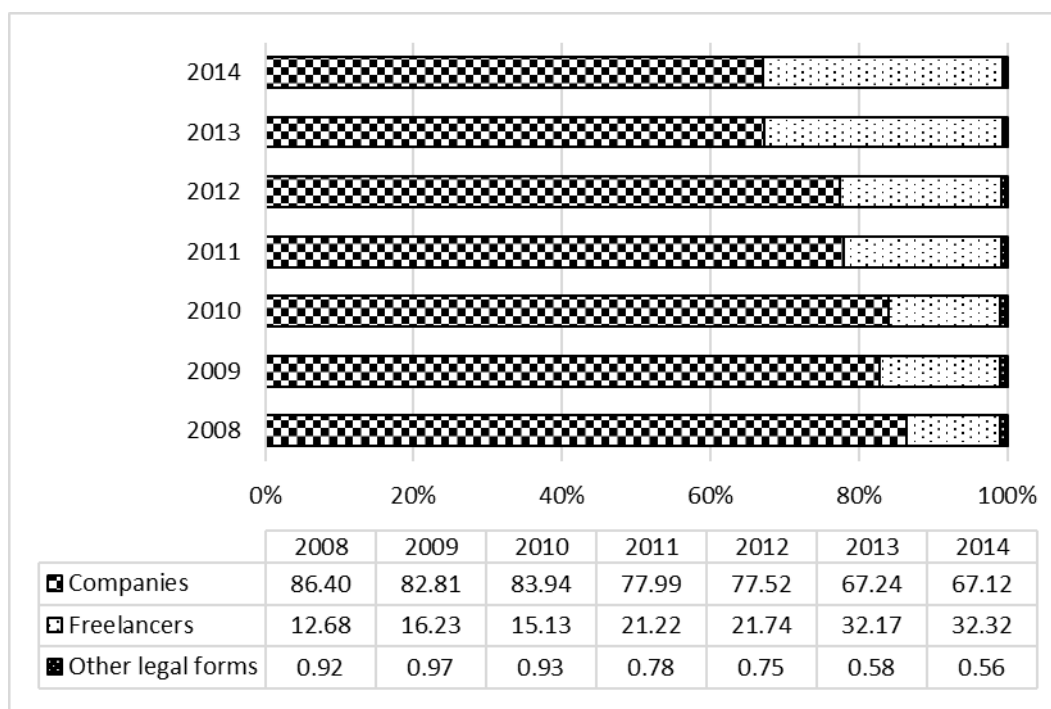
**Fig.no.4 The enterprises active in hotels and restaurants by legal forms
in Romania, in the period 2008-2014**

In addition, the legislation is favorable setting up of small businesses, offering various facilities especially young people.

4. CONCLUSIONS

The business environment in Romania there have been important changes that need to be considered in order to increase competitiveness in the field. Tourism inflows and employment of labor is significant contributions that tourism brings to the economy. tourism is a tool that stimulates the economy contributing to the marginal value and to promote local resources. tourism generates positive results for a country's economy but should not be downplayed the negative economic impact it generates on host communities. Tourism is a global phenomenon with a significant role in the economy, one of the major economic sectors with potential to contribute to the improvement of macroeconomic indicators, which has an impact on increasing the living standards of the population. From research carried out on literature in the field, we can sustain that entrepreneurship is a broad concept, interpreted differently by specialists, often associated with economic growth and development, generating jobs, improving living conditions, technological progress, ie prosperity in a society. Entrepreneurship in tourism can be summarized as the ability to create a tourism company and the leads in a manner profitable. Research on entrepreneurship in tourism can be studied in the future both because of the importance of this concept and especially the fact that it is relatively a field of study that offers many possibilities for development. entrepreneurship in tourism is actually a mix of economic, social and entrepreneur characteristics.

REFERENCES

1. Alan A. Lew, C. Michael Hall, Allan M. Williams, *A Companion to Tourism,* Wiley-Blackwell Publishing, London, 2014;
2. Getz, D., *Event management and event tourism*, 2nd ed. Elmsford, NY: Wallingford, U.K.; Cambridge, MA: CABI Publications, 2004;
3. Getz, D., Carlsen, J. and Morrison, A. *The Family Business in Tourism and Hospitality*, CABI Publishing, 2004;
4. Kuratko, D., *Introduction to entrepreneurship*, 8th ed., South-Western Cengage Learning, Canada, 2009;
5. Johns, N., Mattsson, J., *Destination development through entrepreneurship: a comparison of two cases*, Journal of Tourism Management, Vol. 26, PP.605616. Tayeb, 2005;
6. Morrison, A., Teixeira, R., *Small business performance: a tourism sector focus*, Journal of Small Business and Enterprise Development, Vol. 11, Issue: 2, 2004, pp.166 – 173;
7. Rimmington, M., Williams, C., Morrison, A, *Entrepreneurship in the Hospitality*, *Tourism and Leisure Industries,* Routledge, Published by Elsevier Ltd, 2011, http://doi.org/10.1016/B978-0-7506-4097-8.50002-0;
8. Vilayphone, S., *Current State and Development of Tourism in Luang Prabang*. Scientific Journal of National University of Laos, Vol. 4, 2009, pp.167–180.

THE IMPLEMENTATION OF CONFLICT MANAGEMENT AT WORK IN SMES, FOR THEIR SUSTAINABLE DEVELOPMENT

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Abstract
Labour disputes are disagreements, incompatibilities between employees and employers regarding the interests of economic, professional, social, and rights arising in the course of employment. Conflict management at work brings together activities to harmonize labour relations between employees, between employees and employers in order to realize with maximum efficiency targets of SMEs to ensure their sustainable development. The paper presents theoretical aspects of labour disputes, ways of their solution, but also a case study: From conflict to harmony - a labour dispute and the solution that was implemented in a Romanian SME: SC Iliana SRL.

Keywords: conflict management, sustainable development, labour relations, labour disputes, conflict

1. INTRODUCTION

The conflict is a misunderstanding, a clash of interests, a disagreement, a fight, a violent discussion. It is generated from a contradiction between ideas, interests or feelings of various people involved (https://dexonline.ro).

Conflict can be generated of competition where the parties are, they are aware of possible incompatibilities, each party wishing to occupy a position that is incompatible with the wishes of others. For a situation to become confrontational, parts should be aware of their positions, desires to be inconsistent and exchanges between the parties to be some physical, emotional, virtual etc. Conflict can cause unpredictable events in an organization (Străinescu, 2009).

Labor disputes are disputes between employees and employers regarding the interests of economic, professional or social or rights arising from their employment relationship (http://www.codulmuncii.ro).

Conflict management at work is the art and science to prevent conflicts and if they can not be avoided, to reduce the impact on employees and the company in general. For sustainable development of an enterprise, conflict management at work is as important as resource management of any kind, existing in the enterprise.

The conflict is sometimes inevitable and negotiation is an essential management activity (Iosifescu, 2006).

2. CONFLICT MANAGEMENT AT WORK

Labor conflicts are caused by the existence of the different objectives for different categories of staff, on the one hand and for enterprise on the other.

Labor conflicts are even more serious, since one of the parties trying to gain advantages at the expense of the other party. Employees and the company in which they work should not be opposed, but a constructive competition for a sustainable development of the enterprise (Stanciu, 2001).

Not every disagreement between the parties is a labor dispute. Conflict arises when one party uses a means of pressure on the other. Conflict is maintained mostly by authoritarian management of the company (Stanciu, 2001).

For business, conflicts can generate destructive results or may be beneficial. In terms of effects on the company, conflicts can be (Stanciu, 2001):

- functional, contributing to the development of the enterprise and consist of: the confrontation of ideas and attitudes;
- dysfunctional, the parties to the conflict may harm them or the company they work for.

They are considered labor disputes between employees and the company they work conflicts on the professional, social or economic rights arising from employment relationships. Labor disputes can be solved through "understanding" or procedures established by law (Law no. 168/1999 regarding the settlement of labor disputes, updated 2017).

Labor disputes concerning the exercise of rights or fulfillment of obligations arising from laws or other regulations, collective agreements or individual of labo are disputes relating to employee rights, and these are conflicts of rights (Law no. 168/1999 regarding the settlement labor disputes, updated 2017)

There are multiple causes of labor disputes. Among the most important reasons may include (Stanciu, 2001)

a. lack of honest communication;
b. dissemination of rumors and false information;
c. authoritative management;
d. improvised, ambiguous management, implying lack of clarity in transmission of decisions, the existence of parallels between the posts and groups, etc.);
e. failure to achieve objectives set by the company, due to limited resources and / or poorly planned;
f. lack of human resources development policies;
g. the climate of distrust that exists in întrepindere;
h. the existence of a false professional competitions;
i. the ambiguity of responsibilities.

Implementation of conflict management at work involves especially prevention of labor disputes, and resolving them. Solving labor disputes involving several stages, which have the following sequence:

- recognizes the existence of the conflict;
- identify the causes of the conflict;

- adopt decision of confrontation between conflicting parties;
- confrontation;
- evaluating results;
- adopted a decision after the confrontation;
- evaluating results from implementing the decision (Stanciu, 2001).

Conflicts existed and will always exist because wherever there are people who have ideas, values, circumstances, etc., which may conflict (Manolescu and others, 2007).

3. CONFLICT MANAGEMENT AT WORK - CASE STUDY SC ILIANA SRL

SC Iliana SRL is a Roamnian SME. It has as main activity, manufacturing of wood products. The company is a medium-sized enterprise with a total of 120 employees. Headquarters is located in the town of Targu Jiu, Gorj County. Qualified personnel are 70%, with the following qualifications: economist, engineer, carpenter, electrician, fireman, locksmith and mechanic. The staff worker is 98% of total company staff (Borcoşi, 2011).

SC Iliana SRL is equipped with high performance machines (CNC machining centers, grinding machines, multiple circular etc.). The products manufactured are of the highest quality and unique design. Most customers (90%) are external customers (Germany, Austria and Italy) (Borcoşi, 2011).

SC Iliana LLC is not a perfect organization, relations between employees and the employer does not take place without difficulties. As solid as the relationship between employees and employers is the possilbilty, the risk of making mistakes, and misunderstandings on both sides.

Some employees may be first kind, intelligent, agreeable. Gradually they can be difficult, sometimes unbearable (Bouchard, 2006).

Promoting enterprise of a culture of understanding and amicable settlement of disputes is essential for its sustainable development. It created such harmony necessary to carry out business activities to achieve its objectives.

An essential role in the successful implementation of conflict management at work will have professionals of human resoures, because they must be able to provide relevant opinions, efficient service, thus increasing prestige, the good reputation of their profession.

There was a time for the SC ILIANA SRL orders declined, the number of customers was reduced and turnover decreases with each passing month revenues were reduced. In this crisis, the company took the decision to reduce the number of employees. Employees wondered who will be on the list with the employees who leave the company. Initialy, was set to leave the company who comes in enterprise in the last six months. The revolts did not cease among employees unsatisfied that they leave the company. In this conflict situation, human resources manager proposed dismissal initially only employees who were close to retirement age and those who really wanted to leave (leave town for another job, continuing their studies, etc.). Thus, although the conflict was not out long-term (risk that the company will continue to have fewer orders, revenues dwindling etc.) on short term conflict situation has been resolved.

It has applied such a strategy of conflict resolution, compromise-oriented, finding a mutually satisfactory solution that would satisfy partially both parties to the conflict.

CONCLUSIONS

There are constructive conflicts that benefit both the organization and employees, and destructive conflicts, most of them, the resolution of which cost time, destroy health, emotional affect and costs money. The company engaged in a conflict wasting time necessary to create, to realise productive work.

Implementation in enterprise of the Conflict management at work reduce time spent resolving confict already triggered, time and company resources being directed towards sustainable development of the organization.

REFERENCES

1. Borcoși, C. A. - Metode şi tehnici de management aplicate în IMM-uri, Editura Academica Brâncuși, Târgu Jiu, 2011
2. Bouchard, Nelson – Rezolvarea conflictelor la serviciu, Editura Polirm, București, 2006
3. Iosifescu, S. - Negociere şi managementul conflictelor - suport de curs, 2006
4. Manolescu, A., Lefter, V., Deaconu, A. – Managementul resurselor umane, Editura Economică, 2007
5. Stanciu, S. - Managementul resurselor umane, București – 2001
6. Străinescu, I. – Managementul conflictelor, Editura Didactică și Pedagogică, București, 2009
7. *** Legea nr. 168/1999 privind soluționarea conflictelor de muncă actualizată 2017
8. https://dexonline.ro/definitie/conflict
9. http://www.codulmuncii.ro

HARNESSING THE SOLAR ENERGY POTENTIAL IN SATU MARE COUNTY

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Abstract

The need of energy demanded by the economic growth, coupled with the devastating effect of conventional energy sources over the environment, imposed the identification and use of renewable energy resources. Solar energy is one of the most reliable sources of renewable energy available in our country. In Romania there are 210 sunny days per year, leading to a solar potential that can generate 1.2 TWh of electricity annually. In Satu Mare county solar energy is harnessed by building photovoltaic solar parks located in 45 localities. The electricity produced is used for domestic consumption in 60,000 houses and public parking lighting in Satu Mare city.

Keywords: energetic power, solar energy, energetic efficiency, photovoltaic systems

1.INTRODUCTION

Renewable energy strategy of the EU is elaborated on the basis of the rules and principles that focus on policies for environmental protection and increasing the energetic efficiency. Solar Energy - one of the most valuable renewable resources available in Romania – can contribute to the security of the energy supply, to reducing imports and the dependence on fossil fuels, to reducing greenhouse gas emissions, improving the protection of the environment.

The present article is part of a larger work that aims to identify the relationship between sustainable development and natural capital of Satu Mare county. The methods used to elaborate the research were: the analysis of the legal provisions in this area, and analyzing the technical documentation necessary for the implementation of investment projects in renewable energy production, sensitivity analysis and risk analysis.

2.THE SOLAR ENERGY IN SATU MARE COUNTY

Liberalization of energy markets in Romania, simultaneously with diversifying methods of promoting the use of renewable energy sources and the application of the support mechanisms, are a few premises for increasing the investments in energy. Through the remuneration policy for renewable energy, Romania has become one of the most attractive markets for the investors in photovoltaic systems in Europe and worldwide. Thus, in 2016 in Romania were built 962 photovoltaic stations and parks with a cumulative installed capacity of 4872 MW. The areas with a great potential for harnessing solar energy in Romania are:

Table no.1   Geographical distribution of solar energy potential in Romania

Area	Solar energy potential
Area I Dobrogea and Romanian Plain	over1250 mp/ year
Zona II : Getic Plateau, Part of the Danube Meadow	1250 kWh/mp/year- 1200Kw/mp/year
III West Plain and West Hills	1200kWh/mp/year-1050kWh/m/year
IV Transylvanian Plateau and the northern part of the Moldavian Plateau	1050kWh/mp/year-950kW/m/year
V Carpathians mountains	<>950 kWh/mp/year

Source: ICEMENERG

The mechanism for stimulating investments consists of applying a quotation system through which the investors in this area receive green certificates for each megawatt generated. Energy providers and industrial users must buy certificates based on an annual quotation established by ANRE. Another opportunity aimed to contribute to increasing energy production from renewable resources is the possibility of accessing some funding programs such as: Green House Program, European Energy Program for Recovery, Environmental Management Programs.

Satu Mare county is located in the north-west of Romania at the confluence of Tisa Plain with Eastern Carpathians and Somes Plateau. Temperate climate conditions – continental, with low cloudiness (5,5 days/year) and significant number of sunny days (70-75/year), duration of sunshine with the highest number of hours per year, 1500 in the northern part and 1600 hours in the south-west part of the county, are favorable conditions for harnessing the solar energy in Satu Mare county.

Production and use of solar energy are objectives of the Development Strategy of Satu Mare County, materialized by building the photovoltaic parks that produce energy used both for heating the houses and as electricity for ecological public lighting system. Share investments in photovoltaic parks in Satu Mare was 10% of the total national investments in this field in 2014 (fig. 1).
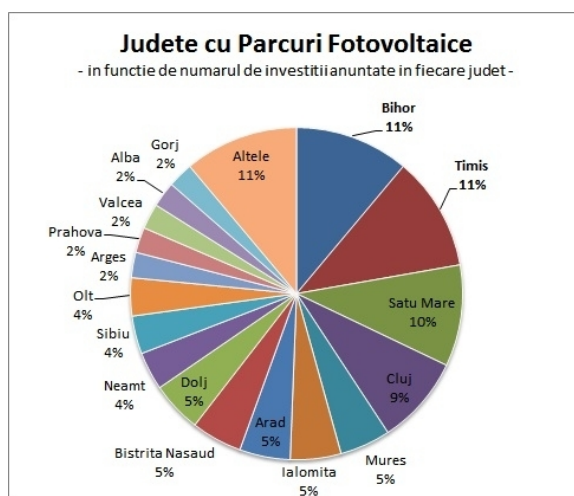
Fig.no 1. Distribution by county of the photovoltaic parks in Romania

The first photovoltaic park in Satu Mare county was built in 2012 in Madaras by a private investor, with a total area of 300 m^2. In Satu Mare county there have already been built 45 photovoltaic parks, the largest being situated in: Livada, Carei, Valea Vinului, Vetis, Doba, Mediesu Aurit, Moftinu Mare, Certeze, Paulian, Negresti Oas, with a capacity between 26K W – 48 MW, summing a total power of 189 MW, from which the national energy system absorbs 160 MW.

The photovoltaic park from Livada town, Ciuperceni area, known under the name of Solaris Project, is the largest photovoltaic park in Satu Mare county, and represents an investment of 75 million Euros of Best Generation, Energiaprima and Stargreen Consulting companies. The construction started in 2013, the payback period being of 9 years.

This park has a nominal capacity of 48 MW, being made of 230700 photovoltaic panels with capacities between 230-255 Wp The total area of the park is 135 ha, out of which 80 ha are used for installations, 30 ha for green spaces and 0,58 for annexes. The connection of the park to the National Energy System is achieved by underground cable with a total length of 5 km. The collectors of the park include the concrete containment tanks of the 28 transformers of the park and installations for collecting rainwater.

3.CONCLUSIONS

Investments in producing energy based on photovoltaic panels are suitable when the mechanisms for stimulating the investments through providing green certificates do not have fluctuations from one year to another. By increasing the photovoltaic systems increases the amount of energy provided to the national network with benefic effects on sustainable development.

BIBLIOGRAPHY

• Raport cu privire la analiza de supracompensare a sistemului de promovare prin certificate verzi a energiei din surse regenerabile de energie pentru anul 2014

• Raport privind Starea mediului în județul Satu Mare, 2014

• Transelectrica-Capacitatea de producție instalata și disponibilă a centralelor fotovoltaice din România,

• E.Barla, G.Badea, Porumb C. Photovoltaic Potential from Solar Database Evaluation, CIE 2010

• Analysis of renewable energy resources in the counties of Szabolcs- Szatmar-Bereg and Satu Mare, 2011

• Stategia de dezvoltare a județului Satu Mare, 2011- 2020

• www.transelectrica.ro/web/procedura-emitere-cv

• http://www.icemenerg.ro

THE ORGANISATIONAL CULTURE AND SUSTAINABLE DEVELOPMENT FROM THE PERSPECTIVE OF HUMAN CAPITAL ATTRIBUTES MANIFESTATION

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Abstract

The analysis of the organizational culture can be accomplished through several perspectives: relational, procedural, anthropological, market or managerial. From this last perspective, Hofstede and Bollinger detected 4 cultural dimensions of an organization, determined by the management style: power distance,
avoidance control, individualism/collectivism and masculinity/femininity.

On the other hand, the challenge of actual society seems to be the way in which sustainable development issue finds itself a solution, so that the sustained efforts of the organizations would not bring harm to future generations.

Could the organizational culture contribute to the implementation of viable programes for sustainable development? From Hofstede's point of view, we can consider that certain characteristics of cultural dimensions allow conducting sustainable development programmes and under given conditions, the organizational management is more successful from this point of view.

The paper also analyzes the practically perspective of this, starting from the characteristics of the cultural dimension management (from Hofstede's point of view), in the west region, revealing its problems and its premises for sustainable development programmes.

This case study presents the interpretation of a 7 synthesis indicators set of cultural dimension Distance Towards Power: criticism of hierarchy, distance towards hierarchy, determined hierarchy, trust, order, benefits, state of mind, for a number of 411 respondents from Timiș county, 170 from Hunedoara county, 221 from Caraș-Severin county and 129 from Arad county, grouped by the following criterion: sex, age, study level, hierarchical position.

The conclusions of the paper prove the direct connection between organizational culture attributes, management style and sustainable development perspectives of the region.

Keywords :organizational culture, sustainable development, human capital, power distance

Classification JEL: **:** M14, Q56

1. INTRODUCTION

Starting with the year 1990 all the big companies in the world have been admitting that the essential concern should not be only profit, but earning a profit along with maximising their social and environment responsibility (Caroll, Shabana, 2010). This aspect takes into consideration three essential aspects: intent, integration and implementation of sustainability as working pattern (Schalteager,al,2014).

Sustainable development is at present a global preoccupation engaging social, political and economic factors in the detection of the best practices of sustainable management, identifying researches, analyses, studies and strategies capable to support this endeavour.

The simultaneous optimisation of social, environmental and financial practices requires special efforts, and the promotion of the best of them allows their assimilation and ulterior application on a larger scale.

On organisational level, the implementation of sustainable development practices requires an effort which should engage all the employees, the reaction to the environment should be perfectly matched so that the effects could be visible. "The dream of any organization is a system where employees share the values of the organisation and even identify themselves with them (and with the organisation *in se*), where employees talk about the organisation in terms of „us", not "them", where individuals understand the objectives of the organisation and the role each of them plays in reaching these goals..."(Hudrea, 2015)

The approach of organisational culture in this context is justified by the impact it has in reaching the organisational objectives and implicitly in assuring a sustainable development thereof. Management is therefore increasingly attentive to the sprit of the organisational team and is allotting more and more time for conveying to them their own philosophy, the values they promote.

A sustainable development may be implemented only if the employees' attitude and conduct is in full harmony with the set of values and the objectives of the organisation.

2. ORGANISATIONAL CULTURE AND SUSTAINABLE DEVELOPMENT

2.1. Sustainable development and its contemporary challenges

The complexity of today's economy has amplified a difficult and thorny issue – that of sustainable development – which, although approached for a certain time, has become a topic triggering analyses, opinions and theories which prove the difficulty and yet the unprecedented importance of this theme. Everyone recognizes the definition of sustainable development forwarded in the Brutland Report (1987): „a way of satisfying the needs of the present generation, without compromising the capacity of future generations to satisfy theirs". It is a definition which shows the key of sustainable approach: the ethical criteria taken into account when the resources of the present are used in economic activities. This report encourages the economic activity using the environment resources intensively and with discernment, so that the environment balance may be reached at a reasonable pace. „Sustainable development means permanently reaching a higher social wellbeing without going at a speed which exceeds the ecological resistance capacity. Growth means getting bigger, development means becoming better" (Daly, 1991).

Later on the concept was developed, as Raderbauer (2011) identified three dimensions specific to sustainable development: the social, the economic and the environmental dimensions. These three dimensions are, in the author's opinion, in full interdependence and mutual conditioning.

Whatever contents are chosen and before selecting possible needs, the concept of ability recalls different concepts of capital; therefore, according to this more general definition, we have to adopt larger definitions of capital than those more frequently included in production functions. The following different types of capital should be considered: a)

economic capital, b) human capital – knowledge, know-how, health, security, c) environmental capital – natural renewable and non-renewable resources, ecological functions, d) social capital - culture, institutions, the efficiency and quality of institutions, co-operative behaviours, trusts, and social norms. (Minică, Franț, 2009)

Nevertheless, although the enunciation of the problem seems to guide us toward simple solutions, a paradox occurs which has not found its resolution yet: sustainable development: economic development. In the context when we are witnessing more and more acute constraints – demographic, technological and environmental – and they seem to keep multiplying, it is difficult to find fast solutions and concrete modalities by which the sustainable economic activity could be made predominant. At present the supporters of sustainable development limit themselves, most of the time, to strongly criticise the existing reality, underlining the danger generated by the great misbalances prefiguring in many parts of the world.

Thus, some authors highlight the strict preoccupation of organisations to earn a profit ‑ Berard (apud Sedlacek, 2011) claims: „Since economists and shareholders took control over organisations, they have changed their mission. Effectiveness and efficiency made them forget their reason to be. We created them to serve us. And here we are today, working to make them rich." Others criticise the strong inclination of the current generation toward consumism – as Slavoj Zizek puts it: „there is nothing natural, nothing spontaneous in our desires. The question is not how to satisfy our desires, but how to know what exactly we want. Our desires are artificial; someone has to teach as how to wish for something, and to show us what to desire." Whereas other authors underline the moral resort which would characterise human life -"For our constant desire to have more and more, we have sacrificed the pleasant character of labour. We wish too much and consequently we work too much. We are by far the richest civilisation ever, but we are equally far from the words enough or satisfaction, if not farther than any time before."(Sedlacek, 2011)

Still, there are authors who attempt to forward solutions by which society could solve theses difficulties. Thus, Senge P by „restoration economy" proposes a governance according to the laws of nature, by mimicking it, so that a harmonisation can take place between the society created by men, and nature, a „symbiosis between company, customer and ecology".

The same solution is embraced by Hawken P (1993), self-adjustment being considered the solution for „development without destroying, directly or indirectly, the surrounding world." He considers that commercial companies affect the most the current ecological misbalance, by their inclination to earn a profit at any rate, without analysing the impact of their activity on future life. The author's proposal envisages a change of paradigm, in the sense of obligating these companies to consider first of all the social and environmental issues.

In France they are vividly debating the concept of circulating economy, by which the products must be redesigned so that they can be permanently reused in the economic process. In this manner the environment resources are protected and its renewal is allowed. This process is equally complicated, as the intervention for the new economy means a change which starts from the very phase of product conception, of their redesigning, which undoubtedly means a longer or a shorter delay.

Whichever the proposed solutions might be, the authors lay the stress on business ethics, on the changes in organisational mentality.

„If organisations must develop their capacity to work with mental patterns, when people will have to build new abilities, to develop new focuses, but we should also have institutional changes triggering such a transformation. The orientation of the organisation toward the correct direction means an effort to overcome all sorts of internal policies and games which dominate traditional organisations. In other words, it means stimulating sincerity. It also implies attempting to distribute business responsibility much widely, but keeping coordination and control". (Senge,2012)

At present we are laying more and more stress on the importance of social responsibility, of active involvement of decision-making factors in the common effort to orient society towards sustainable development. „Reaching a sustainable change requires a huge managerial effort in the direction of change. Changes do no just happen. Long-term changes require intense work. (Polgar Emese, apud Gergely).

Social responsibility is, according to the Green Chart of the European Commission, a concept showing the manager in which organisations assimilated social and environmental preoccupations in their current activities. The concept becomes „a set of management practices making sure the company maximizes the positive impacts of its operation on society" (Jamaly, Mirshak, 2007). Although it is a widely spread concept, it seems many a time only declarative, because ecology issues occur on an global scale and each organisation has the tendency to minimise the local effects of their own actions.

Social responsibility of firms means different levels of approach (internal – towards employees; external – towards the environment, customers), which determines a multitude of domains which may and should be tackled – management, law, ecology, sociology, public relations. (Godfrey,Hatch,2007). Carroll (1979) considers there are four types of responsibility: economic, legal, ethical and discretionary (philanthropic). The pattern was taken over by Wood (1991), improved in the sense of identifying the factors which trigger the reasonable behaviour of employees in an organisation, their reactions to stimuli. Wood insists in his analysis that between the organisation and society there is an extremely powerful interdependence, each influencing the behaviour of the other. Actively applying the principles of social responsibility, the organisation reaches outcomes such as: social impact, social programmes, and social policies. The organisational preoccupations related to the responsibility toward the environment have led to the apparition of the concept of treble balance, treble optimisation, and the three pylons which must be harmonised: ecologic efficiency, social sustainability (preoccupation for the improvement of human resource life) and economic sustainability (long-term profitableness of the organisation).

The growth of the importance of ecologic management and of social responsibility instruments has shortly determined the apparition of the tendency to analyse the problems in a wider context on the organisational level, that of mechanisms and rules by which it implements its sustainable strategies. Thus, beyond honesty, fairness or good intentions of the employees, an important part in the application of these strategies belongs to the existing structures, rules and traditions, grace to which an activity takes place in a certain manner in an organisation. The issue of organisational culture becomes more important for the present when one plans the application and deployment of a sustainable activity.

2.2. **Organisational culture and its role in contemporary management**

In an era when information and implicitly communication have become essential, the focus on the human factor and their conduct at the place of work has become more and more poignant in the organisations aiming at performance. Creating a stimulating climate means researching satisfactions, attachment motivations, morals which become in time behaviour patterns influencing the decision-making process and even the ecologic surrounding frame. „Inter-conditionalities between culture, motivation and work in different cultures are stronger than what meets the eye. In this respect, cultural conditioning is perhaps the most representative footprint applied to contemporary society. "(Tolciu AT,)

Reaching organisational performance supposes the common effort of human resource, their active involvement, their dynamic clustering so that the common purpose can be reached. Thus, organisational culture becomes a success factor triggering the interest of managers and economy researchers at the same time.

The American Heritage Dictionary defines organisational culture as being the „totality of beliefs, values, behaviours of institutions and other results of human thinking and labour, socially transmitted within a community.

Nevertheless the definition seems incomplete and the thousands of articles published on this topic do not seem to clarify the topic.

Thus we see the apparition of organisational culture approaches from multiple angles, namely from the perspective of relations, processes, anthropology, market or management.

The relational perspective grasps organisational culture and it bi-univocal relation with the technological environment, market, management, personnel, etc., nourishing the conception according to which the individuals of the organisation intensely contribute to the consolidation and promotion thereof (Crevoisier, 1999). This perspective, intensely analysed in France, show the evolution of human relations on the organisational level, from the leader-employee dichotomy (specific to the '80s) (Pages and al, 1979), toward the harmony of relations in the autocratic environment, so often encountered at present.

Approaching organisational culture from the *process perspective* encompasses the mechanisms and laws optimising the existing climate and influencing conduct norms applied or values acquired, being landmarks followed by the members of the organisation. These definitions focus on the process character of culture, highlighting inputs, processes, outputs, resulting thus in mental pattern and consensual schemes. Marcouşides and Heck (1993), Sainssulieu (1990), Mc Namara C (2005), Scholl RW (2003) approached organisational culture from this perspective, analysing it either under the form of culture transmitted and acquired (Sainssulieu), input and output (Mc Namara C), or as a complex mechanism comprising social norms, identities, values and consensual patterns improving the organisation a certain positioning (Scholl RW). Ritchie (2000) considers organisational culture as being the congruence between values belonging to the organisation and the individual ones, and the consequences lead to favourable or unfavourable outcomes depending on the degree of their interference.

The anthropological perspective in its turn has important followers in the literature, considering organisational culture as being something organic and emergent. Schein (1984) defines organisational culture as a „a system of postulates" invented by the organisation in order to react uniformly, Tichy (1982) calls organisational culture „a normative adhesive", Hofstede refers to it as „mental programming", Peters, Waterman

(1982) „a coherent set of shared values", Nicoleascu (2004) „a mood, a state of mind", Ouchi (1981) the totality of „symbols, ceremonies and myths showing the subsumed values and beliefs of employees", and Deshpande, Wester (1989) a „pattern of values and faiths shared on the organisational level". Another approach of organisational culture takes into account the market perspective, a very high number of works and analyses regarding the concept from this angle. It focuses thus on the conduct of the organisation which brings „superior performance" and higher values for the customer" (Narver, Slater, 1990), as well as the behaviours, artefacts and organisational norms oriented toward the market, triggering optimum results for it and maximum satisfaction for the consumer. (Homburg, Ptlesse, 2000). In general this perspective lays the stress on organisational performance, positive outcomes (Jaworski, Kohli, 1993), sometimes even attempting a quantification of the market orientation impact. (Deshpande, Farley, 1998).

Last but not least, the managerial approach of organisational culture has important supporters, who underline the importance of the management style and its role in developing and building an authentic culture.

Mintzberg (1979) discovers seven configurations organisations may take: entrepreneurial, mechanic, professional, divisionary, innovative and missionary. Depending on these configurations, management comprises a set of characteristics which in their turn determine completely different organisational cultures. In his turn, Greiner looks at the lifecycle of the organisation which, by the particularities grasped, trigger management styles attracting changes in the organisational behaviour and finally different cultures. Thus, he analyses five ascendant phases and five descendant, crisis ones, each of them being distinct, powerful and influencing the entire organisation.

Organisational culture is appreciated by Cameron, Quin as being the dominant leadership style, which is valorised on organisational level, the symbols used, as well as everything the organisation does to be perceived as unique (2007). The same authors elaborated in 2006 the Competing Value Framework model, which identifies four types of organisational culture: clan culture, adhocratic culture, hierarchic culture and market culture. The differences among these cultures rely on the following attributes:
-   Leadership style;
-   Strategic orientations of the organisations;
-   Beliefs existing on the level of the organisacion toward the dominant bodies;
-   That ineffable "something" which unites employees and makes them feel part of a team.

These attributes are analysed in a quadrant where on the vertical there are organic / mechanicist processes, and on the horizontal there is the internal / external policy. Thus, on the vertical we can detect flexibility, spontaneity, individuality versus order, control, rigidity, and on the horizontal integration of activity versus competition.

From the perspective of sustainable development, Cameron and Quin consider clan culture as being the most adequate. This is due to the characteristics of this culture: a relaxed atmosphere at work, confidence and collaboration among employees, similar conceptions and principles, mutual assistance relations and collaboration.

The vision of Hofsteade (1993) starts from the idea according to which organisational culture is a „collective mental programming", a „culture as mental software" by which the members of a group – from a nation, a region or simply an organisation – act similarly in certain situations, acquiring in time common beliefs and values. In this respect, the authors

consider that the management style is important in the development of an authentic organisational culture. They identify five cultural dimensions which appear depending on the management style existing in the organisation: hierarchic distance, uncertainty control, individualism versus collectivism, masculinity versus feminity and long-term orientation. In this respect the first indicator, namely hierarchical distance (to the power) show to what extent and in what manner employees accept that power should be distributed unequally in the organisation. Uncertainty control shows the extent to which the employees are affected by unclear and unsure situations, as well as by unconventional behaviours. The individualism/collectivism indicator reflects the degree in which the employees develop free relations, with preoccupations for themselvs and their interests. Masculinity/feminity is an indicator showing the differentiation of the social role of genders and at the same time the way in which the organisation accents or blurs this role. Finally, long-term orientation shows the tradition of the organisation and the inclination toward vision, long-term development, highlighting of preoccupations for fidelity and planning.

2.3. Sustainable development and organisational culture

Nowadays, organisations are constrained, beyond economic preoccupations and maximisation of profit, to be actively involved and to bring their contribution to the resolution of social and environmental problems. Climatic changes, occurrence of major misbalances determined by the destruction of the habitats of some species or even their extinction, the scarcity of resources and energy, social disparities are concerns of the organisation, as much as they are the focus point of the entire society. It is difficult for organizations to focus on active involvement in the resolution of social and environmental issues for at least three reasons:

- The lack of experience for many of them along with the lack of know – how able to be a support for them;
- The issue of stakeholders – many a time they are missing and consequently make it impossible or very difficult to embark on a sustainable activity;
- Financial problems– sustainable activities require specific investments, adequately motivated human resources, and the positive results in such activities may occur after relatively long periods of time.

However, many organisations perceive such problems as business opportunities (Freeman, Mc Vea, 2001), being sometime criticised for this. This approach is considered a marketing strategy, by which they intend to enhance their reputation and to obtain an increase of their image in society (Cetindamar, Husoy, 2007), along with the obtaining of material or financial advantages - exemptions from taxes, subsidies. Other authors consider that „this fact is not negative; it constitutes another from of economic growth, based on sustainable growth criteria." (Hristea, 2011). These efforts made by the organisations suppose a strong organisational culture, able to support the direction imprinted by the management. That is why originations „started to valorise so much the human resource and the role the latter, together with the organisational culture, may play in the success of the organisation, so that, when they recruit, they focus more on the compatibility between the values of the individual and the values of the organisation than on the studies, expertise or aptitudes of a particular individual."(Hudrea, 2015). Whereas organisations are forced to overcome their immediate interests and to get involved in the resolution of the social and environmental

problems, the employees seem to be forced to have the same attitude. They must develop a behaviour which should reflect the organisational culture where they carry out their activity being a „stakeholder of social responsibility of the organisation, by their acts, participation and interaction" (Levet, 2005).

The literature in the past two decades considers the employees an individual stakeholder who is integrated in a group and reacts like it, being strongly influenced by the manager of the organisation (Mercier, 1999, Hireche, 2004), and sometimes the influence is determined by the behaviour of the managers who enhances the ethical sprit of employees or on the contrary, temperates it. In the opinion of Wimbush there are three factors of influence of behaviour on organisational level: the ethical climate where the activity takes place, the manner in which managers act and manifest themselves, and the way in which they enforce their power.

Mintzberg also appreciates that the role of the manager is essential in an organisation, as he or she fulfils interpersonal roles (of leader, of representative, of link), informational roles (of spokesman, of diffuser), decisional roles (of resource assignment, problem solving entrepreneurship) (Perrinjoquet, al,2008).

Nevertheless, the analysis of the manner in which organisational culture favours the management of environmental or social issues has to face difficulties determined by the fact that on its level two large sides are distinguishable (Raboca, Puiu, 1999): an observable and thus easily analysed side, and a second individual one, which can be only intuited, deduced through the prism of results and consequences.

On the other hand, Rokeach M(1992) considers organisational culture as being made of two sets of values: a terminal set – with values belonging to employees who intend to produce them, and a set of instrumental ones – professional or behavioural standards elaborated by managers, who in this manner wish to inpose basic values on organisational level. When these two sets interfere, the events produced have a maximum impact, adopting unitary practices by all the parties involved.

Organisational culture, by its components and functions, can guide employees to the fulfilment of objective related to sustainable development. It can mobilise the energy of employees by the imposition of values, assumption which, once accepted, trigger behaviours and attitudes favouring the organisational objectives.

This aspect is the most relevant when organisational culture is approached from the perspective of Hofsteade. In this respect, the five cultural dimensions indicate the modality in which the organisation management and employees can act so that the objective related to the sustainable development can be reached.

The dimensions of individualism/collectivism (I/WE) express the relations existing on the organisation level. Thus, an indicator pointing at strong individualism shows low and thus cold relations among employees, weak relations among them, the stress being laid on their personal interest, environment or social issues being in general ignored or approached only formally. The objectives of sustainable development are difficult to reach in such an organisation. On the contrary, an indicator showing strong collectivism suggests the collaboration and close cooperation among employees, massive participation in events with truthful implications and approaches. The sentiment of solidarity and belonging to a group is strong, that is why the goals assumed regarding sustainable development have better chances of success. The dimension of distance to power shows inequality before power, as well as the manner in which resources and privileges are allotted on the

organisation level. A big distance to power indicates a powerful centralisation and decision-making, high degree of authority and centralisation of resources. The connection between the management team and the employees is weak, interests are divergent, and collaboration is absent, the relation being founded on the absence of liberty of action. The decision is made unilaterally, without consultation with specialists, that is why the employees' confidence is low. Such a dimension discourages initiatives and creativity, which leads to rigid objectives, lacking vision and sustainable strategy. On the contrary, a small distance to power supposes transfer of responsibility to specialist employees, delegations in problems with technical or environmental impact. The adhocratic culture is adequate for a small distance to power, assuring the performance in today society, where the rapid changes in the environment suppose „vision, commitment and annulment and elimination of the state of organisation standstill"(Mateiu., 2014).

The dimension of uncertainty degree is related to the way in which the organisation perceives and reacts to uncertainty, risk and environment changes. The organisations monitoring and attentively analysing risks and changes have a low uncertainty degree. They confront risks, set rules and standards by which they attempt to homogenise the reaction to change and to render it efficient. The activity is in general well-planned; medium- and long-term strategies are established. Uncertainty is considered as being a challenge, these organisations consider they have to do their best in order to stabilise activity and perform in any condition. The organisations focusing on sustainable activities attempt to valorise the opportunities brought about by changes. In order to do that, they need capacity of mobilisation and coordination, so that adaptation should be beneficial. A low uncertainty degree offers this opportunity.

The unstable or even turbulent environment, characterised by frequent changes, sometimes sudden and unpredictable, of the environment components, force the management to adopt prospective attitudes of market analysis, attentive allotment of resources, strategic planning, as well as the implementation of continuous models, meant to render knowledge, prospecting and validation of information permanent, the answer to change fast and efficient, the management being outcome-focused. This response can be offered only by an organisation with low uncertainty degree. The organisation where the uncertainty degree is high are characterised by a sentiment of fatalism before uncertainty considered inherent and in whose presence one cannot react. The rules are scarce, the work is not considered a virtue, everything is relative, and management is task-oriented. Aggressiveness is excluded, and stress avoided. These organisations prefer the achievement of concrete tasks related to the present, planning being only on short term. Prediction is excluded and large-scale actions are avoided.

The activities sustainable by their specificity do not fall within the sphere of interest of these organisations.

The dimension feminity/masculinity also determines substantial differentiations of organisations. Masculine organisations prefer strict rules, indifference to the team, to society; the predominant values are subordination and performance at all costs. The motto is „live to work". The policies adopted are aggressive, confrontations are frequent and direct.

Feminine organisations prefer cooperation, the preservation of the environment and of resources; life quality is important, the care for the sick, the weak and the unfortunate is

spontaneously manifest. The preferred strategies are the „step-by-step" ones, the motto is „work to live". The organisations are balanced, and democratic, relaxed and polite relations are favoured. This type of organisation is very well adapted to the sustainable activities, their principles of operation allowing the approach of sustainable development.

The dimension of time horizon refers to the focus of organisation depending on the time factor. Thus, the long-term orientation shows the perseverance it applies in the reaching of its goals. The organisations focused in this manner are, according to Nicolaescu (2005), characterised by „moderation and possession of shame feeling". They elaborate long-term strategies, are visionary, strongly anchored in the future, they are tenacious and resilient, make savings and venture in vanguard business branches. Sustainable development may be an important concern for this type of organisations. The organisations with short-term focus are interested in the momentary stability, the safety of the present. They have a big respect for tradition, which they commemorate, the past being the time section they worship. They are characterised by a big impulse to spend, the saving share being minimum. They prefer rapid results, they do not get engaged in actions aiming for gains over time. The future is not relevant for theses organisations from the economic standpoint, sustainable strategies being unappealing.

The analysis of these dimensions allow the accurate assessment of the manner in which the principles of sustainable development can be applied and supported constantly by the organisational culture, where the firms understand their role in society and the impact their activity has upon it.

2. CULTURAL DIMENSION: DISTANCE TO POWER. RESEARCH CONDUCED FOR THE WEST REGION – ROMANIA.

Trans-modern society, towards which we are heading, a society based mostly on cooperation, not on competition, requires a new approach of investments in human capital and a re- spiriting of the said item from an integrating perspective (Minica, 2016).

The case study of this article is grounded on the research of the second dimension of organisational culture from Hofsteade's perspective, realised within the COMOR project (**M**anagerial **C**onduct of **O**rganisations in **R**omania) initiated by the Scientific Society of Management of (SSMAR).

We shall present here the conclusions for the four counties of the West Region: Arad, Caraş-Severin, Hunedoara, Timiş.

The stages of the COMOR experiment of SSMAR conducted on the national level in the period 2008-2016 were the following:

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Experiment COMOR

                    Defining sample

                    Sample structure

                    Data collection

                    Information processing

                    Analysis and interpretation of results
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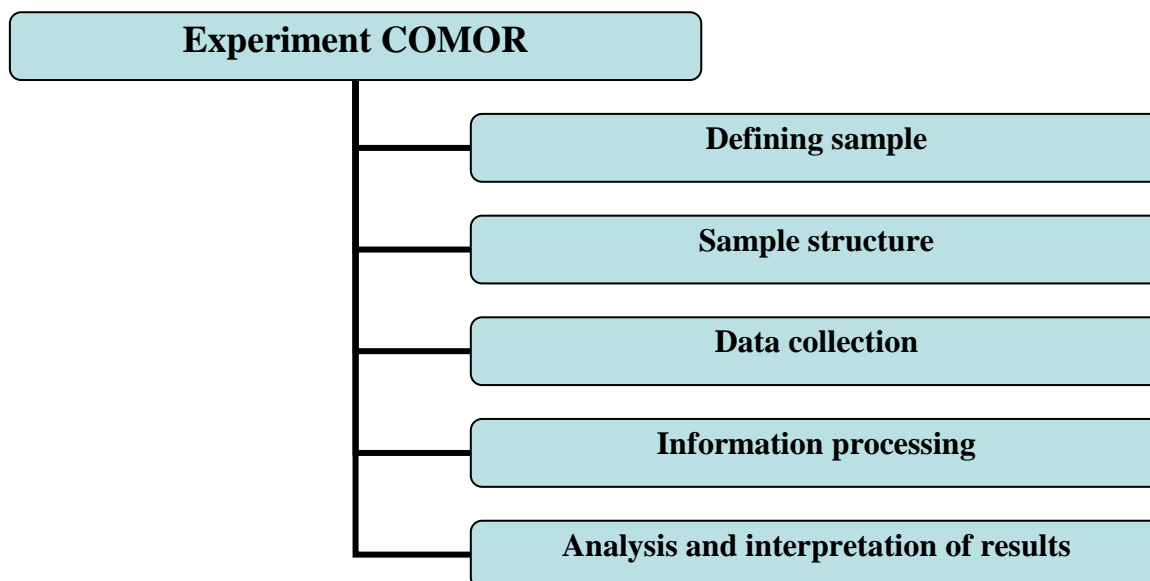
From the analysis of the answers to the inquiries of the COMOR questionnaire it results that the distance to power (DP) is expressed by:

1. Hierarchical criticism manifested by:
> - acceptance or non-acceptance of the leaders' variant by the subordinates;
> - managers' demand to have their decisions debated.

2. Distance to hierarchy:
> - managers' indifference to train successors;
> - managers' non-involvement in conflict mitigation through dialogue with those involved;
> - existence or absence of the courage of those involved in interpersonal conflicts to resort to the manager.

3. Stated hierarchy:
> - managers' attitude toward the social distance between them and the others;
> - requirement of leaders to be obeyed without reservation by their subordinates;
> - premises of authority enforcement.

4. Trust:
> - encouragement / moral support for the employees in general and for the youth in particular for reaching professional performance;
> - freedom of subordinates related to the choice of the methods used for goal reaching.

5. Order:
> - work tasks well defined in the job description charts stimulating the good deployment of employees' activity;
> - clear and detailed work instruction and procedures;
> - motivation based on performance standards and indicators.
> - managers' concern for team creation and management;
> - rigorous activity planning.

6. Privileges:
> - criteria of reward granting;

- privileges stated for different categories of persons (relatives, friends).
7. State of mind or mood:
    - people take pride in managers' achievements;
    - managers take pride in individual achievements of the team members;
    - affective and/or interest cohesion among people;
    - loyalty of employees toward the organization and of the organisation toward its employees;
    - responsible asusming by the managers of the unsatisfactory results of the team they lead.

The structure of the observation units for the 4 counties of the West Region highlights a representative distribution of economic units by domain of activity, type of organisation depending on the organisation form and the number of employees and of respondents by the criteria: age, gender, studies, hierarchy.

Table no.1. *Distribution of observation units by counties*

County	Number of economic units	Number of respondents
Arad	16	129
Caraş-Severin	19	221
Hunedoara	6	170
Timiş	26	410
Total	**67**	**930**

From the perspective of the 7 dimensions of distance to power one applied a questionnaire where the value judgements were presented according to the 5-choice Likert Scale: 1-total disagreement. 2- partial disagreement, 3-indifferent, 4- partial agreement, 5- total agreement.
The conclusions of the result interpretation for a question considered relevant for each of the 7 DP dimensions may be synthesised by counties as follows:
1. *Hierarchic criticism*
In Arad county, 51.16% of women accept the supervisor' variant even it they do not agree with it, whereas only 48.84% of men have this attitude. What is interesting is that in the age variable, 44.19% of the people aged between 30 and 44 accept it, and the most intolerant toward this conduct are people over 60, namely 4.65%. A tolerant attitude toward this situation is surprisingly identified in 32.26% of low-level managers who, for reason of caution and out of promotion interests, prefer to be obedient.
In Caraş – Severin County, the situation is similar as regards the hierarchic by genders and age groups, a tolerant attitude being detected among 70% of the respondents with secondary education. In Hunedoara County, we remark a 47.62% increase of the number of low-level manager who accept the supervisor' decision without comments, and the fact that this type of attitude is shared by 85.45% of peoples with higher education.
In Timiş county men agree in a larger proportion than women, namely 5.24% versus 44.76%, whereas by age groups people below 30 years of age believe they should be tolerant towards this authoritarian manifestation in a 26.32% percentage.

Summarising all the responses collected for the two questions related to hierarchic criticism, we remark a close distribution of those who accept and of those who should accept the supervisors' variant even if they do not agree to it, but also the weight of over 50% of those who consider they should be asked to comment the supervisor's decision if they disagree with them, with significant variation, especially along the studies criteria.

2. *Distance to hierarchy*

57.69% of the respondents aged between 30 and 44 of Arad county consider that the managers in the organisation are constantly concerned with the training of successors destined to give organisation greater success in the next generation, while in Caraş Severin only 6.90% of the people aged over 60 share this opinion. As regards the fact that in the case of tense or conflict situations they should act to mitigate the conflicts by dialogue with those involved, 75% of the Hunedoara college graduates declare they agree to it. In Timiş only 9.62% of top managers have a favourable attitude, whereas the weight of the execution personnel is 36.54%.

What is interesting is the fact that as regards the sitaution when people from the organisation have serious disputes among them, in Timiş there is no intermediate response, 54.15% consider they do not resort to any supervisor, and the rest consider they should not even resort to anyone. The answers to the 4 questions regarding the second dimension highlight an attitude of mutual mistrust between managers and employees, hence the partial communication and higher probability of accentuation of conflict states in the organization.

3. *Stated hierarchy*

In Caraş-Severin 44.74% of the respondents aged between 30 and 44 consider that the persons in power position attempt to reduce the social distance between them and the other, whereas in Hunedoara this percentage is 53.66% and in Timiş 42.68%.

37.59% of the execution personnel in Timiş believe they are urged to obey their boss, whereas only 26.67% have this perception in Hunedoara. As for the assertion that authority and influence of employees within the organisation should rely on their abilities and professional competence, only one top manager in Timiş has a favourable position, while in the other counties none of the managers in this position selected this option.

The answers to the 5 questions regarding stated hierarchy almost generally highlight the fact that employees' authority and influence within the organisation should rely on the positions in the hierarchy and formal authority granted to them, while professional competence becomes secondary.

This conclusion underlines the hierarchy type of organisations inherited and accepted by the great majority of the interviewed subjects and the ignoring of the possibility of getting organised as a "beehive" network wehre each person is useful and appreciated for the contribution to the organisation development.

4. *Trust*

In Timiş the 25% weight is common for the groups below 30 years of age of those with aged between 35 and 44 of the subjects considering that employees should be encouraged to fight for the continual improvement of professional performances, in Arad women expressed this attitude in a 75% percentage while in Caraş-Severin the low percentage (13.33%) of people under 30 is surprising.

On the other hand, the weight of high education graduates of the same county considering that managers confer their subordinates the freedom or choosing the methods to reach goals is 78.95%, very close to the percentages recorded in the other 3 counties analysed.

The high average scores (over 4) recorded in this series of 3 questions related to the trust dimension prove more a desideratum of the interviewed subject than a reality. It is the aspect treated with the greatest optimism in all 4 counties, proving from the psychological perspective the very element on which the relation between managers and subordinated should rely on, namely TRUST!

5. *Order*

For this dimension 8 questions were asked, for the very reason it was considered the most vulnerable feature of management in Romanian organisations, to which one can impute most of the causes of the lack of productiveness and competitiveness on the global market.

In Arad 75% of the people under 30 think that work tasks should be better detailed in the job description chart, in Caraş-Severin 75% of the subjects with higher education, and in Hunedoara 42.86% of the execution personnel agree with this desideratum.

66.67% of the men interviewed in Timiş consider that a strict description of work tasks stimulates the deployment of the employees' activity, and by age variables the highest percentage is recorded for the 30-44 age group (47.90%).

In Arad 34.21% of the execution staff consider that the work instructions and procedures are sufficiently detailed and accurately expressed.

As regards the manner of motivating the staff, only 24.68% of those with the age between 45 and 60 working in Timiş consider that the bosses mainly rely on performance standards and indicators, not on charisma, whereas in Hunedoara the people under 30 agree with it only in a 2.17% proportion.

Stimulation and preoccupation of managers to encourage team work is regarded with more optimism by women in Arad (60.78%), while in Hunedoara the situation is the opposite (men 75.76%). The absence of activity planning is highlighted by the high percentage of those considering that they should be set 1-2 weeks in advance by those in charge; this opinion is shared by 44.44% of the subjects aged between 30 and 44 of Caraş-Severin and 40.74% of low-level managers.

The complex issue of organisation is difficult to grasp in a limited number of situations, but the initial hypothesis that organisation has defficiencies in our economic organisations was proved.

6. *Privileges*

31.51% of the people with secondary education in Caraş-Severin consider that the rewards granted in the organisation rely both on performance and on other factors (length of service, relatives and friends, political affiliation, likeness, etc.). In Arad 80% of men consider that rewards are based on factors which are not related to performance, and in Timiş 53.33% of the subjects aged between 30 and 44 consider that the persons with a certain rank and position (relatives, business affiliates, etc.) have special privileges helping them exercise the attributions of the position.

The answers to the 3 questions regarding privileges highlight the predominance of the personal-type culture which may generate injustice, abuse and frustration.

7. *State of mind or mood*

7 questions are asked for highlighting the manner in which organisational culture and personal attitude influence each other. A 57.73% percentage of the men questioned in the

Timiş organisations take pride in the individual achievements of their managers, while only 20.26% of the young people under 30 in Caraş-Severin share their joys and troubles with the members of their team.

In Hunedoara one in three women feel loyal to the organisation, while in only 18.52% of the people in the 45-60 age range think that the organisation is loyal to its employees.

45.28% of low-level managers and only 5.66% of top managers in Timiş take pride in the individual achievement of the team members, while in Arad only 24% of the execution staff considers that their direct supervisor assumes responsibility for bad results, without blaming others. 76% of men in Hunedoara believe that in general people in the organisation are friendly and open, whereas in Caraş-Severin only 11.54% of the people with secondary education truly share this opinion.

Incurable optimists, Romanians prove to be friendly and open especially on the low level of hierarchy, and the higher they climb the more they start to change their attitude and to "forget where they started from", vitiating thus the state of mind or the mood in the organisation.

3. CONCLUSIONS

Change is achieved through people and the resources of the organisation, and that is why people must actively intervene in the life of the organisations, and overcome the obstacles they may encounter. Individuals are aware that the destiny of the organisation is also their destiny. (Minică, 2016 b)

The conclusions of the case study highlight the features of the second dimension of organisational culture, apud Hofsteade, from the perspective of the 7 dimensions presented.

Analysing distance to power, we see some differences between counties and from the perspective of the distribution of respondents by age, gender, studies, hierarchy.

By counties, according to the form or expression of cultural dimension the highest asymmetry coefficient is recorded in Hunedoara, and the lowest in Arad; in Caraş-Severin we have a 25.44% variation coefficient, whereas in Timiş it is 22.89% for the answers *partial disagreement*.

The study shows first of all the employees' inferiority complex toward power, the submission to authority. Moreover, what is important is the avoidance of responsibility assuming and abstaining from (directly) criticising the management. On the other hand, the weak coherence of organisational values is apparent, organisational culture being extremely poorly visible (in a single aspect analysed). There is no cohesion; we witness the lack of opening toward the organisation values and of the trust in the existing management.

Sustainable development can be approached with difficulty when it comes to the good results expectation, because, although the passive and submissive attitude generates comfort from the management perspective, the discordance between the interests of the organisation and its employees may lead to different approaches of this concept, with less visible results from sustainable perspective. Sharing organisational values means enthusiasm and abnegation, as well as an atmosphere dominated by low distance to power, features which are not encountered in the authoritative management existing in these counties.

The organisations of the West Region shall be able to generate in the future a sustainable economic activity on the medium- and long-term only if they improve the activity organisation and encourage mutual trust between managers and employees, making the passage from a „fortress" type of culture to a process-type one, where each individual represents a wheel in a mechanism meant to operate by collaboration, respect and clear tasks.

REFERENCES

Cameron, K. S., Quinn, R. E., *Diagnosing and changing organizational culture: based on the competing values framework, sl*, Revised ed,2006;

Caroll, Shabana, *The business Case for Corporate Social Responsability:Areview of concepts, Research an Practice*, International Journal of Management Review, 2010;

Carroll A, *Three – Dimensional Conceptual model of corporate Performance*, Academy of management Review, vol 4, nr.4 , 1979;

Cetindamar D, Husoy K, *Corporate Social Responsability. Practices and enviromentally Responsible Behavoir. The Case of the United Nations Global compact*, Journal of Business Ethics,2007;

Crevoisier I.P., *L'introduction de démarches d'amélioration de la qualit: Un exemple d'analyse du changement organizational à l'aide d'une approche culturelle et centre sur la personne*,IzabellePierardCrevoisier,https://doc.rero.ch/record/4996/files/2_these_PierardCevoisierI.pdf,1999;

Daly H.,*Elements of environmental macroeconomics*, Ecological economics.The science end management of sustenaibility,1991;

Deshpande, Wester ,*Organizational culture and marketing: defining the Research*, Journal of Marketing, 53(1) 3-16, 1989;

Deshpande, R., Farley, J.U., and Webster, F.E., *Corporate culture. Customer orientation, and innovativeness in Japanese firms: A quadrad analysis*. Journal of Marketing, 57(1)1993;

Freeman R.E., Mc Vea J., *A Stakeholder Approach to Strategic Management in M.A. Hitt, RE Frememan et JS Harrison* (Eds), The Blackwell Handbook of Strategie Management: 189-207, Oxford. Blackwell PUBLISHING HOUSE Inc,2001;

Hawken P, *The Ecology of Commerce: A Declaration of Sustainability*,Harper Collins, NewYork, 1993

Hireche, *L'influence de l'éthique des managers sur les comportements au travail et la performance organisationnelle: esquisse d'un modèle conceptuel*, le XVème Congrès de l'AGRH, Montréal, 1-4 septembre 2004, 2004, Canada, https://hal.archives-ouvertes.fr/hal-00156106,2004;

Hudrea A, *Cultura organizaţională în România. O analiză a cercetărilor în domeniu,* Revista Transilvană de Ştiinţe Administrative 2(37), 2015;

Hofstede G. *"Cultures and Organizations: Software of the Mind".* Administrative Science Quarterly. Johnson Graduate School of Management, Cornell University1993;

Homburg C, Ptlesse C, *'A Multiple- Layer Model of Market-Oriented Organizational Culture: Mea- surement Issues and Performance Outcomes*:' Journal of Marketing Research, 37 (November),2000;

Hristea A.M., *CSR – Între deziderat şi realitate, Economie teoretică şi aplicată*, vol XVIII (2011) nr 10(563)

Gergely T, *Întreprinderea cu adevărat responsabilă*, Kovet, 2007;

Godfrey,Hatch,*Researching Corporate Social Responsibility*: An Agenda for the 21st Century, Journal of Business Ethics, ian., vol70,2007;

Jamaly D, Mirshak R,*Corporate Social Responsability(CSR). Teory and Practice in a Developing Cuntry Context,* Journal of Business Ethics, 72:243-262,2007;

Jaworski B.J., Kohli A.K.,*Market orientation: Antecedents and Consequences*, Journal of Marketing, vol.57,1993;

Wood D.J., *Social Issus in Management: Theory and Research in Corporate Socil Performance,* Journal of Management, vol 17, nr.2,1991;

Levet P, *La DRH de demain face au nouveau comportement du salarie*, Revue management et Avenir, 4171-185,2005;

Marcouşides G., Heck R.,*Organizational culture and performance: Proposing and testing a model.* Organization Science, 4(2),1993;

Mc Namara C (2005),Field Guide to Consulting and Organizational Developement with Nonprofits Authenticity Consulting, I.I.C. Minneapolis, Minnesota;

Mateiu S, *Managementul schimbării culturale şi rezistenţa la schimbare a managerilor Romtelecom*, Teză de doctorat, Iaşi, rezumat,2014;

Mercier S,*L'ethique dans les entreprises*, Paris, Decouverte,1999;

Minică, M.; Franţ, F., *Theoretical Aspects related to Sustainable Development,* Centrul de Cercetări Economice Uuniversitatea "Lucian Blaga", Revista Economică, Supliment nr.1/2009, Sibiu-Chişinău, p.154

Minica, M., *Education- the foundation for sustainable economic development. The "RESPECT" learning strategy principles implemented in higher education education,* ECOFORUM Journal Suceava, Volume 5, Issue 2 (9), 2016 (a)

Minică, M., *Knowledge and Intellectual Capital Management in Higher Education,* International Conference Business Administration and Economics. Peoples, Ideas, Experiences, 4th Edition, University "Eftimie Murgu" of Reşiţa; 13-16 October 2016 (b)

Mintzberg H., *The structure of organization*, Ed. Addison Wesley, 1979;

Narver J.C., Slater S.F., *The effect of a Market Orientation on Business Profitability*, Journal of Marketing, 1990;

Nicolescu, O.,*Managerii şi managementul resurselor umane*, Ed Economică, Bucureşti, 2004;

Ouchi W.G.,*Theory Z: How American business can meet the Japanese challange*, Addison-Wesley Scading MA, 1981;

Pages M., Bonetti M., De Gaulejac V and Descender D, *L'emprise de l'organisation*,- Paris : Presses Universitaires de France, 1979;

Peters T, Waterman R and Phillips JR, *Structure is not organization*, Bussines Horizont, 23(3), 1980;

Perrinjoquet, Vos, Furrer, Egri, Gerer *les responsabilites sociales des entreprises envers leur parties prenantes,* Revue economique et sociales nr 1/2008, SEES/RES;

Puiu Al, *Management – analize şi studii comparative*, Ed. Independenţa Economică, Piteşti, 1999;

Raboca HM, *Teorie şi comportament organizaţional*, curs master AP,

Raderbauer M,*Strategic Sustenability-Strategic Implementation of sustenable Bussines practice in Viennese Accomodation*, Univ. Of Exeter, United Kingdon, 2011;

Ritchie M.,*Organizational culture: An examination of its effect on the internalization process and member performance,* Southern Bussines Review, Spring, 2000;

Rokeach M,*The nature of Human Values*, N York, Free Press, 1992;

Roşca, Doina; Roşca, Adrian, Sorin; Sîrbu, Mirela, *The Methodological Framework of COMOR Research*, Ovidius University Annals - Economic Sciences Serie, vol. XI, Issue 1, 2011;

Roşca, Constantin; Istudor, Nicolae, (coord.) *Cercetarea culturii organizaţionale în România,* Editura Universitaria, Craiova, 2016

Schalteager St, Harms D., Horisch I,*Corporate Sustenability in International Comparizon*, Centre for Sustenability management, vol 31, Springer Int Publishing Switzerland, 2014;

Schein, E., *Coming to a new awareness of organizational culture*. Sloan Management Review,1984;

Scholl RW, *Organizational Culture – The social inducement system, Research notes*, University of Rhode Island, 2003;

Sedlacek T.,*Economia binelui şi a răului*, Ed. Publică, Bucureşti,2012;

Senge P, *A cincea disciplină*, Ed. Bussines Tech, Bucureşti, 2012;

Sainssulieu R.,*Culture, entreprise, société: Culture d'entreprise, vous avez dit*

cultures? Université Catholique de Louvain : Institut des sciences du travailDossier no.12,1990;

Zizek S, *The Parallax View*, Cambridge, MA şi Londra: MIT Press, 2009;

Tolciu AT, *Cultura organizaţionala transculturala.O cercetare empirică*, Rev. Oeconomica 1/2015, Bucureşti;

Tichy N.M., *Managing change strategically: The technical, political and cultural Keya*, Organizational Dynamics, 11(4), 1982.

THE DEFINITION AND CONCEPTUAL ASPECTS ON HUMAN RESOURCES MANAGEMENT IN THE REPUBLIC OF MOLDOVA

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Abstract

In this article are presented the aspects and the defining conceptions of the human resources management, their importance but also the necessity of some major changes in this domain from the autochthonous organisations. In this context, we are aiming to enhance economic efficiency of the companies from the Republic of Moldova by the help of the improvement of the human resources management. Elements, pecualiarities, definition and evolution of the concept human resources management are presented in the vision of different authors. In case of the organizations from the Republic of Moldova the modernization of the old habits dominated by the authorities, the absence of a professional approach of the human resources, represents a significant change, which must be fulfilled and which led to the necessity of the approach of this problem.

In conclusion the potential of the human resources and implicitly of the management of the human resources are emphsized by the help of scientific arguments, as also the proposals, which would contribute to the improvement of the situation in this domain of activity.

Keywords: human resources, human resources management, organisation.

*JEL Classification***:** M10 ; M12 ; M54.

1. INTRODUCTION

We are living in a society of knowledge, in which the human being is becoming increasingly an essential resource for the achievement of the success in business, while the human resource management becomes a strategical element in frames of all organisations.

We are living in a society that is in a continuous change, while the acceleration of the economy at both national and international level tranforms the human resources management into a strategical and important element in frames of all organisations.

In the actual conditions, when the competitiveness among organizations is in a continuous growing, the employees represent the most effective resource because just people are able to adapt, to create value, to acquire new knowledge, transforming themselves into strategical resources that should be managed cautiously [14]. The human possibilities haven't been realesed yet and completely discovered, while the malfunctions and the crisis indicate the fact that the managerial system shows deficit at the level of autochthonous organisations. Thus the quality of human resources management consitutes the main instrument of the success and performance of all organisations.

The economist Schulz, who received the Nobel Prize in 1979, asserts that the economical develment depends on the application of knowledge, calling this economical aspect „human capital", taking into consideration of all human abilities, that are innate or achieved.

Concomitantly human resources management represents an unique, complex system that presupposes the continuous improvemnt of the activities of all employees in order to achieve the organizational objectives [15]. The complexity of the character of resources management consists first of all in its main composition and especially in the microeconomical composition, where the human resources represent the totality of the employees of an organization, while the human resources managemnt is carried out usually in institutions and organisations. In an approach at the macroeconomical level the human resources are the unique inexaustible resources of creativity, solutions and of new, authentic, redoutable reasons.

Republic of Moldova, ex-state with centralised economy treats and assimilates with difficulty the basic elements of the modern human resources management. This is the reason why at this moment a significant change, which shall be registered in Moldova, is the change in the domain of the human resources management. It should be replaced the old methods based on responsabilities and authority with practices that increasingly emphasize the development of the individuals.

A well-prepared and developed person can provide something valuable and efficient for the management of an enterprise. This strategy is not so easily accepted by the managers of the second age. The more difficult is accepted the new, the less succes will have the business in Moldova, especially on the international markets of goods and services. Just those who approach professionally the human resources dispose of all chances to achieve performances.

Taking into consideration the chosen theme, in conclusion are emphasized through scientifical arguments the potential of the human resources and implicitly of the commitment of human resources, as also the brought forward proposals, which would bring contributions to the improvement of the situation in this domain of activity.

2. PAPER BODY

The society is in a continuous development while the human being, placed in the center of the organization, is associated with more terms such as: „workforce", „human resource", or „human capital", which are present nowadays in published literature [2]. On this way we are aiming to explain the respective terms.

The first preoccupations with the human condition appear in the middle of the XIIIth century, when the French doctor Armand de Villenueve studied the professional diseases, emphasizing the role of the ambiance factor (library, Live Register). Besides that it can be mentioned the studies of Leonardo Da Vinci, Galilei, Descartes, Borelli, etc. [13].

According to the opinion of Aurel Manolescu the human resources represent the „organisation" itself [1].

In the same context Boudreau and Milkovich afirm that in spite of the fact that the technical installations, technical equipment or financial capital are important, the human resources in a particular regard are even more important [10].

For an efficient administration of HRM shall be understood the factors that have impact on the people's behaviour in the work environment. It includes: [4]

- **Knowledge** – is the result of the educational system, from which benefits an individual, sometimes concentrating more on those aspects connected with the professional training in a particular domain;
- **Aptitudes** – are the innate characteristics of an individual. They can not be created,

but just activated or developed, some of them being sometimes in a latent, inactive state until the moment of their request;

- **Skills** or **abilities –** are the result of the implementation of practice of the theoretical knowledge by the help of the contribution of aptitudes;
- Blood charactereology – another factor that characterizes the human resource;
- **Attitude**- represents the intention of an employee to work, to become more useful at the workplace, to fructify the whole professional competence [4];

We shall recognize that in Republic of Moldova many of the concepts, methods and procedures of the theory of the managerial practice are inappropiately approached. Taking into account all the aspects that were presented above, in case of an personal employment, they would change the situation to a positive direction.

Not coincidentally Bill Gates, the founding president of the company Microsoft, stated in 1992:" If 20 from my best people, with who I work, leaves me, in some months you will not hear of Microsoft anymore.". This assertion represents an unequivocally acknowledgement of the fact that the human factor in the present constitutes the strategical element, on which depends a good conduct of business activities at global level [11].

The human resources dispose of specific significances in contrast to the other resources and in this context Rensis Likert underlines that „from the all tasks of the management, the leadership of the staff is the most important because it depends on the way how good everything is carried out in an organization [8].

We continue the row of the significant aspects:

- the only resource with the capability of making own decisions or not allow to be manipulated or influenced;
- the only resources with a potential of increase and development, as also with the incapacity to know and overcome its own limits;
- it constitutes a special human potential, which shall be understood, motivated, trained for acheiving the organizational objective;
- they are the first stategical resources;
- resources with immobility to changes [12];

In the scientific literature, the term of human resource management has known several opinions. It is a relatively recent term, more modern, to which during the development of the society has been assigned multiple expressions, such as: "stuff administration", " industrial relations", "managing of the stuff activities", " employee development", "stuff management", " human resource management" etc.

In the opinion of some authors, the management of human resources stem from the general management. Today, the term is more and more familiar and requires a total approach or treatment, global, interdisciplinary and professional to the staff issues within an organization [8; 9].

"Human resource" refers to the fact that any individual, if they create the necessary conditions, can grow and develop. This fact denotes the essence of the human resources management to teach the managers how to create those conditions that will allow the employees to produce more [5].

David Guest (1989) is the first one who addressed the question which is the difference between "personnel" and "HRM". Many authors have given an answer to this

question, the first one being Armstrong, who appreciated this fact as: "the human resources management could be just an old wine in new bottles" [3].

John M. Ivancevich and William F. Glueck noted the fact that the term does not only reflect a concern over the organizations and people in the organization, but also to whole societies, in terms of people's problems [2]. Miller believes that the human resources management should not serve only the employer, but should also provide the employee's interest and hence, of the entire society.

The same view has L. R. Hilgert, and namely that it indicates the fact that the problems in organizations relate to all managers and not just to those from the personnel category [6].

For some researchers in the field such as: R. Mathis, D. De Cenzo, G. Milkovich, A. Manolescu and others, there is not a content difference between the personnel management and the human resources management, but rather a difference in terms of the optics of the human resources approach within organizations [2].

Currently, in indigenous state enterprises, but also at much higher levels of organisms, they continue to use the traditional concept of "personnel management", where the staff is considered to be the "work force". In order to exceed the actual situation in the Republic of Moldova, they should focus on the training of specialists in the field of human resources management.

The term "human resources management" has a large number of definitions, where, the difference is made by certain certain features.

In opinion of A. Manolescu and V. Lefter it represents "the ensemble of activities relating to human resources ensuring, a wide coverage concept that refers to the philosophy, policies, procedures and practices with which employees are guided" [7].
R. L. Mathis and P. Nica are focusing more on the process, saying that human resources management involves continuous improvement of all employees in order to achieve organizational goals and mission [9].

Through an analysis of the definitions above, we find that they represent some additions from each author, according to the completed period of the human resources management evolution, depending on the enterprise or social and economic realities. In a more detailed analysis of these definitions, we can say that human resources management had a rather "evolutionary" than "revolutionary" appearance because it has developed from the personnel management.

3. CONCLUSIONS

The importance of human resources management gets today an essential place in the economic sector. The term of human resource has developed considerably until nowadays. We see a need of some major changes in order to ensure them a better administration; the current trends of development of the human resources management in the world theory and practice, but also in the Republic of Moldova.

By developing this study, we have tried to satisfy the need for information in the field of human resources management, to contribute to filling a strong gap felt in the literature, to materialize in this way our concerns manifested in this well-defined scientific area, but with a less known issues, and sometimes, erroneously interpreted. Any social-economic activity can ensure its success by using the human resources in a rational and

efficient way. In this sense, the chosen theme is a highly topical one.The success, performance and competitiveness of organizations depend strongly on the content and the quality of the human resources management.

REFERENCES

[1]   Adumitrăcesei, I. Niculescu, N. (1995). Piaţa forţei de muncă. Chişinău: Editura Tehnică.

[2]   Bîrcă, A. (2015). Redimensionarea managementului resurselor umane în contextul integrării Republicii Moldova în Uniunea Europeană. Chişinău: Editura ASEM.

[3]   Chasovschi, C. Managementul resurselor umane - curs, 2007-2008. http://www.academia.edu/6740456/ Curs_ accesed   09. 02. 2016.

[4]   Cezar, M. , Vasilescu, G. (1996). Managementul neconvenţional. Bucureşti : MNEC.

[5]   Cole, C. A. (2001). Managementul personalului. Bucureşti: Codex.

[6]   De Cenzo, A. Robbins, D. P. (1988). Personnel/human resource management, englewwood cliffs, Prentice - Hall.

[7]   Lefter, V. , Manolescu, A. (1999). Managementul resurselor umane. Bucureşti: Economica.

[8]   Manolescu, A. (2003). Managementul resurselor umane, Ediţia a patra. Bucureşti: Economica.

[9]   Mathis, R. , L. , Nica, P. , 1997. Managementul resurselor umane. Bucureşti: Editura Economica.

[10]   Milkovich, G. , T. , J. , W. , Boudreau, (1991). Human resource management, Irwin, Boston: Sixth Edition.

[11]   Mihail, O. , Nicolae, F. (1998). Resurse umane: provocare pentru managementul contemporan. Piteşti: Paralela 45.

[12]   Petrovici, V. (2007). Managementul resurselor umane. Constanţa: Editura Muntenia.

[13]   Petrescu, Ion. , (1998). Teorie şi practică în managementul resurselor umane. Braşov: Editura Lux Libris.

[14]   Rotaru, A. , Prodan, A. , (1998). Managementul resurselor umane. Iaşi: Editura Sedcom Libris.

[15] Rusu, Costache. , Voicu, Monica, (1993). ABC-ul managerului. Iaşi: Editura Gh. Asachi.

ACHIEVING SUSTAINABLE DEVELOPMENT THROUGH LEAN, SIX SIGMA AND LEAN SIX SIGMA IN SERVICE INDUSTRY – A SYSTEMATIC LITERATURE REVIEW

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Abstract
The purpose of this paper is to critically review the Lean Six Sigma (L6σ) methodology and highlight its importance to achieve sustainable development in service industry. To do this, a systematic literature review (SLR) of the subjects under investigation was conducted. We examine the compatibility and divergences of the green, lean and Six Sigma concepts and implications regarding its sustainable implementation in service industry. The study has two major contributions. First, it is one of the first researches that investigate the potential benefits of integrating green, lean and Six Sigma in service sector. Second, it supports and expands current literature, providing both academicians and practitioners a better panorama to understand the present status of L6σ for achieving sustainability in service sector.

Keywords: *Lean Six Sigma, Sustainable development, Service Industry.*

Classification JEL: L80, O14, Q01, Q55

1. INTRODUCTION

Sustainable concerns have increasingly gained importance in practice and academic discussions over the last decades. In addiction to, in the post-modern era there is a growing pressure to improve quality, efficiency, effectiveness and sustainability of services, an industry which accounts for more than 50% of gross domestic product in the big economies around the world.

In the last decade, academics and practitioners have extensively cited the benefits of Lean implementation to the service industry. Most of these studies were applied in healthcare (e.g. laboratories chain, hospitals, nursing and surgery), insurance companies, software giants to educational institute, within both public and private sectors.

Nowadays, although the integration between lean thinking and Six Sigma become more popular among the manufacturing industry, the Lean Six Sigma (L6σ) practices are progressively becoming widespread in studies about service. The L6σ incorporates the

principles of speed and immediate action of Lean thinking with the vision of Six Sigma of quality without defect and reduction of the impact of the variation in the times of queue; It attacks the hidden costs of complexity and is a mechanism that seeks the engagement of all for joint reach and without trade-offs of quality, speed, and cost (George, 2003). However, the service industry still has few studied about the L6σ and even less regarding the sustainable development (SD). Thus, there is lack of studies about ways of achieve the SD in services through L6σ.

The purpose of this paper is to critically review the Lean Six Sigma methodology and highlight its importance to achieve sustainable development in service industry. To do this, a systematic literature review (SLR) of the subjects under investigation was conducted. This review explores the following questions:

(1) What are the compatibilities and divergencies between green, lean and Six Sigma in service industry?
(2) What are the main implications of Lean, Six Sigma and L6σ for achieving sustainable services?

2. METHODOLOGY

In this paper was conducted a systematic literature review in order to locate relevant existing studies based on prior formulated research questions, to evaluate and synthesize their respective contributions. This SLR consists of five consecutive phases: (1) formulation of the question, (2) location of studies, (3) evaluation and selection of studies, (4) analysis and synthesis, and (5) reporting and use of the results (Garza-Reyes, 2015).

Identifying the keywords is extremely critical to a comprehensive and unbiased review. The search is limited to a set of key words ('Lean', 'Six Sigma', 'Lean Sigma', 'Lean Six Sigma', 'LSS', 'Environment', 'Sustainable', 'Sustainability', 'green', 'green Lean Six sigma', 'green LSS', 'Sustainable Lean Six Sigma' and 'Service'). We searched these keywords in the following databases: Scopus, PubMed, Emerald, Taylor and Francis, IEEE Xplore and Wiley Publication.The conducted research had combined the search terms into title, abstract or keywords, limited to papers published in peer-reviewed journals up to March 2017, when they were available. Additional papers were identified by reading the papers included in the review. 272 records were identified through databases searching. Then, they were refined by titles/abstracts sreening analysis and 207 records were excluded. Following that, 65 articles were analized in depth in an interative process. Based on the full text analysis, a total of 43 articles complied with the selection criteria. Hence these were all the articles that, to a certain extent, referred to Lean, Six Sigma or Lean Six Sigma related to sustainable development in services.

In the next stage, researchers discussed and created a database using Microsoft Excel. There was a synthesis analysis, in which individual articles were categorized and organized by concepts.

3. SUMMARY OF RESULTS

Table 1 indicates some of the main compatibilities and divergences between Lean, Six Sigma and green in the Service Industry, including general points for all sectors.

Table 1. Compatibilities and divergences between green, lean and six sigma

Compatibilities	Reference	Concepts
Lean and green maintain synergies related to waste reduction, lead time reduction, product design and the use of various approaches and techniques to manage people, organisations and the supply chain.	Garza-Reyes, 2015	Lean and green
Lean facilitates sustainability, and people integration is the key to lean success, which drives the organization towards sustainable operations management. Sustainable processes reduce ecological impacts and may eliminate wasteful depletion of scarce resources. The synergies from the horizontal and vertical directions of human integration can lead to value creation in the organization.	Wong and Wong, 2014	Lean and green
Just like Lean, Green advocates the elimination of seven wastes: unnecessary usage of water, unnecessary power usage, exploitation of resources, pollution, litter, greenhouse effects and eutrophication.	Chugani et al., 2017	Lean and green
Lean and Green can be also integrated into other models like ISO 9001 and 14001.	Kurdve, 2014	Lean and green
Lean tools and practices may facilitate the focus on sustainability at the operational level.	Verrier et al., 2014	Lean and green
The use of the DMAIC (define-measure-analyse-improve) model can provide Green Lean with a more specific and holistic project-based orientation to the implementation of Green Lean initiatives. They identified a set of keys to management to ensure the effective and successful implementation of Green Lean Six Sigma initiatives: (i) leadership and people, (ii) Green and Lean Six Sigma tools, (iii) continuous process improvement, (iv) strategic planning, (v) stakeholders, (vi) results and knowledge management.	Cherrafi et al., 2016	Lean, Six Sigma and green
Divergences	**Reference**	**Concepts**
Sustainability is concerned with the capability of meeting those needs in the present and future (efficacy, effectiveness and ethics), whereas lean is more oriented to delivering products or services with the minimum use of resources (efficiency and effectiveness).	Martínez León and Calvo-Amodio, 2017	Lean and green
While lean is more concerned with respecting people, including customers and employees, sustainability appears to expand the concern by seeking the well-being of all stakeholders in the long term.	Martínez León and Calvo-Amodio, 2017	Lean and green
Green is focused on environmental performance, Lean is focused on waste and its elimination and Six Sigma focuses on the continuous improvement of quality of products and services in an organisation by minimising the defects.	Kumar et al., 2016	Lean, Six Sigma and green

4. DISCUSSION AND CONCLUSIONS

Table 2 portrays some implicatios about how different services could achieve sustainable development through lean and lean six sigma.

Table 2. Implications for achieving Sustainable Development

Sectors	Implications	Reference
Education	Courses should combine lean and green thinking to teach lean and green concepts and approaches, and also integrate studies such as green productivity, eco-efficiency, eco-effectivity, and sustainable business practices. University schools of business and engineering could be ideal candidates for incorporating these curricular changes.	Dhingra et al., 2014
General	It is important that employees have a deep understanding of the concepts underpinning green and lean practice and the employee development processes must be linked to the overall green and lean transformation process, because human capital is at the very core of green and lean practice.	Zhan et al., 2015
Air	It is important to reduce fuel consumption by eliminating network redundancy and by reorganizing hub networks, and balancing this against possible service level degradation.	Ryerson and Kim, 2014
Sales	Green may be a useful support to Six Sigma as a programme that helps to save resources.	Wei et al., 2010
Food processing	Lean Six Sigma might be successfully applied in the food processing industry through VSM-DMAIC, in which the value stream mapping – is used to identify the type of waste and the DMAIC improvement cycle was applied in order to understand and address the wastes by applying relevant Lean and Six Sigma tools. Also, L6σ can be effectively applied in the food processing industry as a contributor toward the environmentally sustainable fresh food supply chain.	Powell et al., 2017
Information and Communication Technologies (ICTs)	In the age of science and information, it is important to build bridges between disciplines, between academics and industry. More specifically, the field of Life Cycle Assessment (LCA) can adopt and apply a substantial amount of tools and lines of thought from operational management such as the Lean heritage and six sigma and vice versa.	De Soete, 2016
Heathcare	While lean approach is used to reduce the use of water, materials and pharmaceuticals in medication processes, without, however, undermining patient safety, Six Sigma approach is used to monitor actions before and after interventions and improve medication processes from the point of view of environmental sustainability. Thus, they must complement each other and the L6σ is method by which hospitals can control costs, reduce the likelihood of errors and improve patient safety and health care quality, promoting sustainability practices yields not only environmental benefits, but also economic ones for the institution.	Furukawa et al., 2016

As stated by Suárez-Barraza and others (2012), more than reach cost reduction and failures correction, we expect that green L6σ service focus on a cultural change, bringing a new sense of discovery, experience and or re-discovery internally and externally, maximising a collaborative value creation, developing new behaviors and skills for employees and delivering environmental-friendly services to the clients.

Moreover, the both cultural change and implementation of L6σ tools and principles can ensure sustainability and critical aspects as respect for people and employee engagement depends on responsibility along with ownership, human-centric approach, deeper problem-solving capabilities and cross-functional relationship, which are fundamental for continuous improvement (Gupta and others 2016).

Therefore, this research aims to contribute to the scientific community on the theme studied, since it present a representative selection of international research in interdisciplinary area as it is a relevant issue in which there is a dialogue of sustainability science, business management and industrial engineering, enabling the researchers to contribute with relevant research.

REFERENCES

Cherrafi, A., Elfezazi, S., Chiarini, A., Mokhlis, A., Benhida, K. *The integration of lean manufacturing, Six Sigma and sustainability: A literature review and future research directions for developing a specific model.* J. Clean. Prod. 139, 828–846, 2016. doi:10.1016/j.jclepro.2016.08.101

Chugani, N., Kumar, V., Garza-Reyes, J.A., Rocha-Lona, L., Upadhyay, A. *Investigating the green impact of Lean, Six Sigma, and Lean Six Sigma: a systematic literature review.* International Journal of Lean Six Sigma Iss International Journal of Lean Six Sigma. 2017. doi:10.1108/IJLSS-11-2015-0043

De Soete, W. *Towards a Multidisciplinary Approach on Creating Value: Sustainability through the Supply Chain and ERP Systems.* Systems 4, 16, 2016. doi:10.3390/systems4010016

Dhingra, R., Kress, R., Upreti, G. *Does Lean mean Green?* J. Clean. Prod. 85, 1–7. 2014. doi:10.1016/j.jclepro.2014.10.032

Furukawa, P. O., Cunha, I. C. K. O., Pedreira, M. L. G., Marck, P. B. *Environmental sustainability in medication processes performed in hospital nursing care.* Acta Paul Enferm. 29(3):316-24. 2016.

Garza-Reyes, J.A. *Green lean and the need for Six Sigma.* Int. J. Lean Six Sigma 6, 226–248, 2015.doi:10.1108/IJLSS-04-2014-0010

George, M.L. *Lean Six Sigma for service: how to use Lean speed and Six Sigma quality to improve services and transactions*. New York, McGraw-Hill, 2003.

Gupta, S., Sharma, M., Sunder M.,V. *Lean services: a systematic review.* International Journal of Productivity and Performance Management, Vol. 65 Iss 8 pp. 1025 - 1056, 2016. Permanent link to this document: http://dx.doi.org/10.1108/IJPPM-02-2015-0032

Kurdve, M., Zackrisson, M., Wiktorsson, M., Harlin, U. *Lean and green integration into production system models e experiences from Swedish industry*. J. Clean. Prod. 85, 180e190. 2014. http://dx.doi.org/10.1016/j.jclepro.2014.04.013.

Kumar, S.., Luthra, S.., Govindan, K.., Kumar, N.., Haleem, A. *Barriers in green lean six sigma product development process: An ISM approach.* Prod. Plan. Control 27, 604–620, 2016.doi:10.1080/09537287.2016.1165307

Martínez León, H.C., Calvo-Amodio, J. *Towards lean for sustainability: Understanding the interrelationships between lean and sustainability from a systems thinking perspective.* J. Clean. Prod. 142, 4384–4402, 2017.doi:10.1016/j.jclepro.2016.11.132

Powell, D., Lundeby, S., Chabada, L., Dreyer, H. *Lean Six Sigma and environmental sustainability: the case of a Norwegian dairy producer.* Int. J. Lean Six Sigma 8. doi:10.1108/IJLSS-06-2015-0024, 2017.

Suárez-Barraza, M. F., Smith, T., and Dahlgaard-Park, S. M. *Lean Service: A literature analysis and classification.* Total Quality Management & Business Excellence, 23:3-4, 359-380, 2012.

Verrier, B., Rose, B., Caillaud, E., Remita, H., 2014. *Combining organizational performance with sustainable development issues: the Lean and Green project benchmarking repository.* J. Clean. Prod. 85, 83–93. doi:10.1016/j.jclepro.2013.12.023

Wei, C. C., Sheen, G. J., Tai, C. T., and Lee, K. L. *Using Six Sigma to improve replenishment process in a direct selling company.* Supply Chain Management: An International Journal, 15(1), 3-9, 2010.

Wong, W.P., Wong, K.Y. *Synergizing an ecosphere of lean for sustainable operations.* J. Clean. Prod. 85, 51–66, 2014. doi:10.1016/j.jclepro.2014.05.093

Zhan, Y., Tan, K.H., Ji, G., Chung, L., Chiu, A.S.F. *Green and lean sustainable development path in China: Guanxi, practices and performance.* Resour. Conserv. Recycl. 2015. doi:10.1016/j.resconrec.2016.02.006

MANAGEMENT OF A FOOTBALL CLUB SPORTS

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Abstract

Applied sports management achieved some sports structures full functionality of a large number of people of means and skills, objectives and intentions. Through sport management in different individuals or teams are highlighted efforts towards achieving a common goal, complicated and difficult process due to concerns divergent always, through its cutting issues are transformed into ensuring mobility objectives.

Keywords: management, sport, activity, competition.

1. INTRODUCTION

The biggest "danger" for sports organizations today is not another sports organization, no other sporting branch, neither the social environment, nor the athletes, nor even its critics or opponents: the number one enemy is the organizational structure and the sports organization itself (Voicu, AV, 2002). Because of their inertia, sports organizations risk losing their members in favor of promoters who are willing to offer better opportunities through a strong marketing structure. Today, people need three basic conditions for practicing a sport and taking part in sports competitions: material support (opportunities and infrastructure), organizational support (planning and programming) and professional management (information within the organization and a managerial process Very well set up). Inertia, combined with the lack of organizational structure, the absence of administrative procedures, the incapacity of managers, will not only destroy the organization but also the sport movement in the form known today. For these reasons, the most appropriate action forces are sought to avoid these situations.

2. PAPER BODY

In this study we analyzed the financial situation of CS Pandurii Lignitul Târgu-Jiu club for 2015, making it very difficult to make a closer analysis because we could not get the documents.

C.S. Pandurii Lignitul Tg-Jiu is a non-profit legal entity with a monosportive structure (football game), organized as a sports club in accordance with the provisions of Article 27 of Law 69/2000 and of the Ordinance no.26 / 2000.

The aim of the sports club is to ensure the normal conditions of evolution of the football team's championship, to defend, support and promote its interests, to develop a material basis for the economic and financial support of the sports activity, to support a representative football team at the county level Gorj.

The object of activity is to organize the sporting activity of the club and to carry out economic activities in order to obtain the necessary funds for its operation.

The share capital of 430,000 lei constituted through the cash contribution of the associate members, being deposited in the account and on the name of the association as follows:
- Energy Complex Oltenia SA .... ………. ... 300,000 lei (69%)
- Union of Mining Trade Unions Oltenia .... 100,000 lei (23%)
- Artego SA .... ……...15,000 lei (4%)
- Tg-Jiu Local Council .... …………………...15.000 lei (4%)
  Total **.. .. ..…………430.000 lei (100%)**

By the status adopted by the associates, it is not possible to open subsidiaries or to participate in the share capital of the associated companies.

Applying regulations

Regarding the application of regulations within the club from the sports point of view, we can say that the athletes of this football club strictly adhere to these regulations.

Indoor Ordering (ROI) is to ensure the club's operation in a fair, dignified and pleasant domestic environment, conducive to the high sport and individual performance of employees and athletes.

Below we present a swot analysis of Pandurii Lignitul Târgu-Jiu:
Managerial analysis of the Pandurii Lignitul Târgu-Jiu football club

STRONG POINTS	WEAK POINTS
- Applying regulations, principles, codes of ethics in the pursuit of sporting activities, applying sanctions if there are deviations from regulations. - Existence of high staff morale and trust in the institution - Professionalism towards the problems that arise - Ensuring human resources training within the club - The existence of a good collaboration with the County Sports Department, the Prefecture, the County Council, the City Hall and other institutions. - Existence of financing from budget allocation, from funds from the Local Public Administration, but also from own revenues - Athletes' training process takes place in the club's sports base - Continuous improvement and refinement	- Rigidity and lack of responsiveness of subordinates to changes taking place in society. - Taking some unrealistic sporting goals by some coaches. - The capping tendency of some athletes and coaches. - Fluctuations of specialized personnel - Lack of staff knowledge of modern means of information - Withdrawal of major investors.

of club facilities.	
OPPORTUNITIES	THREATS
- Funding opportunities from European funds.	- The global financial crisis can trigger a reduction in the potential for government and private funding. - The tendency of specialists to leave the system.

3. CONCLUSIONS

It addresses the impact of the environment on sports activity with all the economic, political, legislative and technological consequences on the training and implementation by the managers of the competitive strategies.

The manager of sports organizations must identify a number of present and future issues, demonstrate through his work that change is a corporate, strategic and efficient issue with critical implications in human resources management, with the precise aim of ensuring successful implementation of change In the sporting organization he leads.

Achieving and implementing the goals is one of the managers' obligations to both employees, sportsmen, the community as well as to the sports and sporting consumer. The implementation of these elements makes sporting activity more attractive for all categories involved, which has the ultimate goal of attracting sports and sports benefits to the consumer.

REFERENCES:

1. Voicu, A.V., "Management of Sports Organizations and Activities", Risoprint Publishing House, Cluj-Napoca, 2002.

2. Administrators' report for 2016, C.S. PANDURII LIGNITUL TG JIU.

    3. http://www.panduriics.ro

THE REFORM OF EU DEVELOPMENT POLICY

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The European Union is an economic and political union, developed in Europe, but globally visible due to prosperity and competitiveness both in the business side and development potential. However it must face the fight against disparities between Member States and their regions in terms of welfare and productivity. Even to respect the principle of 'Unity in Diversity' ("Unity in diversity" is the motto of the European Union. The meaning of the motto is that, through the European Union, Europeans are joining forces to work together for peace and prosperity, and that the various cultures, traditions and languages coexisting in Europe are an asset to the continent) is becoming more challenging since the disparities between the EU founding states have widened with the increase in intensity of successive stages of integration and expansion.

What we call today Cohesion Policy (Economic, Social and Territorial) of the European Union or Regional Policy and Cohesion of the EU, is a structural policy in the sense that, in its implementation, it aims to eliminate or at least mitigate the disparities between regions and citizens of the European Union in order to a balanced development. Regional and Cohesion Policy seeks to balance growth gaps that are created constantly and provide support regions that develop slowly to catch up with the growth of the Union as a whole. The problems of these regions consist of disparities in income levels, the rate of output growth, employment and levels of economic inequality, generally between geographic regions of the same country. It can be seen that in the EU, regional disparities have a pronounced dominant center-periphery, the most disadvantaged regions being located in the outskirts of western, southern and eastern. This kind of imbalance has occurred as a result of differences between various regions in terms of economic, social and geographical. Our analysis suggests that economic reform in the EU may be restructured and rebalanced in part, by economic and institutional changes that will promote a high saving and sustainable reform in the EU.

In the current period, it is important to fully connect all developing countries to a new philosophy of development, its own European Union and widely shared globally - that of sustainable development. Thus it follows the setting up of specific objectives for passing, in a reasonable and realistic time, to the development model generating high added value, propelled by interest in knowledge and innovation, oriented towards the continuous improvement of people's quality of life and the relationships between them in harmony with the natural environment.

The sustainable development addresses in a economically, socially and environmentally way, the concept of quality of life, promoting the idea of a balance between economic development, social equity, the efficient use of resources and preservation of the environment. The key element of sustainable development is reconciliation between the development and the environment, promoting the integrated process of developing and decision-making, both globally and regionally, nationally or locally. The economic development involves, in a new sense, promoting clusters and thriving metropolitan economy. In the present global landscape, location is vital and becomes a competitive advantage. The formed clusters in similar industries, specialization, skilled labor and technology helps in reducing transaction costs and determines the business growth, entrepreneurship, exports and other productive activities. In addition, local services such as restaurants, shops and other commercial activities also increase, helping to the development of the region [16].

Convergence efforts were also necessary before the implementation of the single currency. According to the theory of optimal currency areas, initiated by Mundell (1961), cohesion ensures that the member countries will be equally affected by external shocks and will not be destabilized by the transmission of a single monetary policy.

The concept of convergence, based on the neo-classical growth model, was introduced by Barro and Sala-i-Martin (1992) and Mankiw, Romer, and Weil (1992). Since 1992 a very large number of studies have examined ß-convergence between different countries and regions for different time periods. In the economic literature we meet two types of beta convergence: absolute and conditional.

Assumptions of absolute ß convergence are that the economies converge to the same steady state. Assumptions are usually fulfilled when we refer to relatively homogeneous economic groups as the U.S. or the European Union.

ß convergence is determined through regression with one dependent and one independent variable, where dependent variable is the growth rate of per capita GDP and independent variable is the initial level of per capita GDP in purchasing power terms.

$$\frac{1}{T} ln \left(\frac{GDP_{i,T}}{GDP_{i,0}} \right) = \propto + \beta \, ln(GDP_{i,0}) + \varepsilon_i$$

Where:

α, β –parameters to be estimated, α – the constant term, β = the convergence coefficient

$\frac{1}{T} ln \left(\frac{GDP_{i,T}}{GDP_{i,0}} \right)$ – the average growth rate of per capita GDP between 0 and T for country i;

$GDP_{i,0}$ - initial per capita GDP for country i

ε_i – the stochastic error of the equation.

Beta coefficient represents the rate at which a country`s real GDP per capita approaches the steady state rate of growth or a speed of convergence. Negative beta coefficient indicates convergence, while a positive rate indicates divergence. Beta convergence measures the speed at which poor countries aproach rich countries in real GDP per capita terms, in a specific time interval.

Report, 2012). Denmark, Sweden, Germany and Finland are the best performing countries in the EU and thus form the group of "Eco-Innovation Leaders".

We are all shaped by many of our individual identities - as citizens of a nation, residents of an area, members of local groups, employees of companies, members of civil society organizations, and allow us to feel bound not only by a one place or one culture or one region or one religion but multiple facets of our world. Each of us is a node in a global network of traditions, knowledge and different cultures.

The greatest challenges of our generation - in the environmental, demography, poverty and global policies- are simultaneously the most interesting opportunities.

Our generation can solve the riddle combinations of economic welfare and climate sustainability. Our generation can combine science with new principles of ethical global collaboration to transmit to the future generations, a healthy planet.

INNOVATION IN TECHNOLOGY – HOW TRAVEL BECOMES "SMART"

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Abstract

Worldwide, the society, which has become increasingly dynamic, is still deeply marked by the globalization phenomenon. This is even considered by some authors as being "the most important change in human history" (Ritzer, 2011), continuously redefining the companies' mode of action on the market, regardless of the economic sector in which they operate. Clearly, achieving a sustainable competitive advantage has become a real necessity in the current global context in order to attract new consumers and to retain the existing ones, so that even the smallest detail can make the difference, bringing extra atractivity to the offer. (Castaño, Sujan, Kacker & Sujan, 2008) In tourism, the economic sector with the fastest growth, progress is not possible anymore without innovation, and technology is currently the area with the greatest potential in terms of improving performance. Thus, in the context of rising needs and requirements of consumers, especially of those in the millenial generation, smart technologies acquire new and new meanings and become a key factor in the future development of the travel industry.

Keywords: *innovation, smart technologies, performance in tourism, globalization*

Classification JEL: *L83, O32, Q55, Z32*

1. INTRODUCTION

Tourism continues to be one of the largest economic sectors, generating worldwide prosperity, creating numerous jobs and permanently encouraging exports. The United Nations has declared 2017 as the International Year of Sustainable Tourism for Development, which is a real opportunity for bringing to the fore the economic, social, cultural and environmental benefits that this domain can offer.

Despite the more and more frequent and unpredictable terrorist attacks, political instability, natural disasters or different globally erupted epidemics, according to the World Travel & Tourism Council (WTTC), tourism directly contributed to a 3.1% increase in the gross domestic product (GDP) in 2016. In total, in 2016, it generated 7.6 billion USD (approximately 10.2% of the global GDP) and 292 million jobs (9.6% of the total worlwide employment), the equivalent of 1 in 10 jobs throughout the entire global economy. The same study shows that the tourism industry represents, at the level of 2016, 6.6% of the global exports and almost 30% of those of services; the tourism growth exceeded, for the sixth consecutive year, the global economy growth (2.5%), being more pronounced than that in financial services, manufacturing, public services, distribution or transportation. (WTTC, 2017)

The forecasts for 2017 are also positive, and WTTC estimates for this year an increase of 3.6% in the total contribution of tourism to the GDP, still emphasizing the role of this sector as an engine for economic development. It is expected that this contribution

will reach 11,512.9 billion USD in 2027, year during which a value of 381.7 million jobs (an increase of 2.5% per year) is also expected for the employment in this field. (WTTC, 2017)

Undoubtedly, the tourism industry has undergone strong transformations over the years, and most of them are a result of the rapid technological change. During the last decade, the development of search engines, online distribution channels, the increasing use of social media and the existence of virtual communities have fundamentally changed the information, search and purchasing process regarding holidays, giving tourists the opportunity to make better decisions. The widespread adoption of mobile technology, especially that of smartphones, accelerated this whole process and enables them to receive all the information they need or they want wherever they are, at any time.

The "smart tourism" concept has gained more and more notoriety lately, being viewed as a strategic tourism development tool. As an example, in the context of the general framework of smart city initiatives, the European Commission has identified travel information and communication as a strategic objective aimed at improving human mobility and transportation. (European Commission, 2015) Generally, smart tourism supports the development of the information and communication technology infrastructure, its purpose being to improve the management and governance, facilitate product/service innovation, enhance the tourist experience and, last but not least, increase the competitiveness of tourist destinations and businesses in this area. Considering that tourism is one of the most important or, in some countries, even the most important economic sector, smart tourism seems to draw the direction for the successful development of sustainable tourism and exerts a strong impact on tourist destinations and their representations in the online environment. (Gretzel, Koo, Sigala & Xiang, 2015)

2. PEAK TECHNOLOGY AND MODERN TOURISM

Recent advances in technology have led to the development of innovative smart technology solutions that create unprecedented opportunities for the tourism industry, completely transforming the way tourist experiences can be created. Technology is no longer just about the simple everyday functional devices, but offers real tools that facilitate the creation of experiences, and the latest web-based technologies, social networking tools and mobile technologies enable both companies and consumers to interact constantly. With the increased competition on the market, exploiting the potential of new technologies has become a desideratum, not only in terms of optimizing existing processes, but also in terms of facilitating personalized services and memorable experiences.

Smart technologies mostly refer to products, conditions or movements which involve a variety of features that can be adapted to different circumstances. (Gretzel, Sigala, Xiang & Koo, 2015) The dynamics of the global society and the evolution of the information and communication technology make smart technologies become more and more popular in the field of tourism too, as a highly dynamic area, characterized by a constant need for innovation. Within that sector, smart systems represent autonomous systems which anticipate the needs of users and support the creation of appropriate products and services, aimed at enhancing the experiences, generating added value and increasing market competitiveness. Technology has become the driver of the tourism

companies' operations, being a key element in terms of product, service or process innovation and, at the same time, a determining factor of attraction and retention of tourists. (Neuhofer, Buhalis & Ladkin, 2015)

Tourists now have an active role and are no longer willing to accept predefined experiences, but they involve themselves in creating unique experiences and value. According to an Intercontinental Hotels Group study conducted in 2014, travelers from emerging countries, such as China and Russia, have higher expectations in terms of personalization of services compared to those who come from developed countries (for example, the United Kingdom or the United States of America). (Intercontinental Hotels Group, 2014) The same study claims that, in the hospitality industry, the personalization of services mainly refers to:

- the existence of a quick check-in system and the reduction of the time needed for reservation
- providing information according to each client's interests
- providing distinctive in-room services for a better experience (for example, TV set on a certain channel upon the client's arrival or an auto-brewed coffee pot) and the opportunity to control their room (for example, the option to change the temperature via smartphone)

From the client point of view, the personalization of information facilitates decision making by providing only those relevant details, without a large amount of information, much of it unnecessary at the time. Information about the customer and their consumption habits can be obtained from their history or directly, and now, Big Data is successfully assisting the creation of an as completeas possible profile. (Buhalis & Amaranggana, 2015)

Smart tourism is a concept used to describe the increasing dependence of tourism destinations, their industries and that of tourists on the information and communication technology, which enables the transformation of a huge amount of data into value propositions. The "smart" term refers to technological, economic and social evolutions which use technologies based on sensors, Big Data, open data, new forms of connectivity and information exchange (e.g. RFID, NFC). According to some authors, the "smart" attribute is not given by the technological evolution itself, but rather by interconnectivity, timing and concerted use of different smart-considered technologies.

Smart tourism is a real social phenomenon, found at the confluence of the information and communication technology and the tourist experiences. The smart experience component mainly focuses on those travel experiences facilitated by technology and enhanced through personalization, awareness of the context in which they occur and real-time monitoring. (Buhalis & Amaranggana, 2015)

The newest technologies easily find their place within hotels, providing endless possibilities to customize tourists' experiences, and also to facilitate and streamline specific activities. In recent years, smartphone applications have become extremely popular in this sector, but successful hoteliers go further, by giving guests the opportunity to control everything in the hotel room via their mobile phones. Big names such as Starwood, Hilton and Marriott have already implemented such applications that allow controlling rooms and services (e.g. using the smartphone for room access or for access to certain client restricted areas, such as the gym or the pool). Controlling the in-

room temperature, adjusting the light or changing TV channels through the mobile phone are already commonplace actions for certain hotels in the USA, and things will advance more and more. Customers will be able to remotely personalize their hotel room even before arriving at the hotel (e.g. setting the temperature, choosing the products they want in the minibar).

Another important element in terms of smart technologies is represented by beacons, which, despite their relatively recent appearance on the market, are used by many companies to send customized promotional messages to customers or to monitor consumption habits via Bluetooth. Hoteliers have not rushed into using these devices, but, given their success in other industries such as retail, restaurants, airports, museums, it can easily be assumed that beacons represent one of the elements that will mark the close future of this sector as well. This technology allows a two-way communication between the small electronic beacons placed in different locations around the property and clients' smartphones, which may become an advantage by sending promotional messages that encourage the use of certain hotel services. One major advantage of beacons is that they work where the GPS does not, helping customers in terms of guiding them throughout the hotel. Upon entering the room, they can be informed about room service or about the way they can use different in-room features. On the other hand, hoteliers can gain valuable information about their guests' habits, information that can later be used for the benefit of the company (for example, where in the hotel did guests spend the most time and when). The famous hotel chain, Marriott, has experienced beacons in 14 locations in 2015, offering special promotions through them, regarding spa services and restaurant discounts when customers approached the respective areas. Starwood has also turned to this new smart technology in order to streamline the check-in process – the Concierge has the opportunity to greet customers by using their names, and those in Housekeeping can easily know when clients are not in their rooms. Facebook took advantage of the beacon technology's success, giving retailers in the United States the opportunity to apply for and use free of charge such devices that send notifications via the Facebook application installed on smartphones (sharing business' place tips and any photos or statuses that customers' friends have shared about that business). (hospitalitynet.org, 2015)

Virtual reality is, without any doubt, also part of the smart tourism concept, giving tourists the opportunity to experience, for example, a visit to a specific hotel or a specific destination without actually getting there. Thus, a hotel's potential clients can take virtual tours to help them make the right decision regarding the desired hotel services, while event organizers can evaluate the possibility of holding an event on the existing premises of the hotel, depending on their needs. Marriott has been a pioneer in terms of virtual reality in the hospitality industry, through the "Travel Briliantly" campaign – guests can use a "teleporter" in order to virtually "visit" eight different locations, including a Hawaiian beach and a skyscraper in London. In the future, hotels might even offer virtual concierge service, which will allow guests to visit neighborhoods and local attractions from their hotel room. (hospitalitynet.org, 2015)

It is obvious that smart technologies are advancing very rapidly, the most recent evidencebeing the passenger drones which will be used starting this year in Dubai. Tests are already underway; such a drone is capable of carrying a single passenger for 30 minutes at an altitude of about 300 m; the destination is selected by the passenger using a

touch screen, which is the only existing control in the interior of the drone. However, there is a command center on the ground, so the take off, the flight and the landing are closely monitored and, in any case, security systems are highly advanced – for any problem, no matter how small, the drone automatically lands in the nearest safe place. In a world where hackers become more and more skilled, it is important to mention that these drones are equipped with secure computer networks, which prevent hackers to take control and divert the drones. (mirror.co.uk, 2017)

3. SMART CITY – THE CITY OF THE FUTURE

The "smart" term is also used for cities (smart cities) to describe the use of innovative technologies aimed at optimizing and streamlining resources, increasing sustainability and the quality of life for both residents and tourists through their integration into all aspects of concerned cities. Asia is the continent where the most serious efforts in terms of smart tourism are submitted, governments in China and South Korea supporting the development of the technology infrastructure underlying this type of tourism through massive funding. In Europe, most initiatives in this regard have arisen as a result of smart city projects, which helped develop the European smart tourist destinations. The emphasis is on innovation, competitiveness and development of applications for end users by using and differently combining the existing data in order to enhance the tourist experience. The key element of smart destinations is the integration of the information and communication technology into the physical infrastructure. In Barcelona, for example, there are interactive bus shelters for tourists, which not only provide useful information and details regarding the travel schedule, but also offer them USB ports for charging their mobile devices. In addition, a special smartphone application has been created, through which bicycles that can be rented for moving around the city can be localized, thus encouraging eco transport. Authorities in Brisbane, however, have installed over 100 beacons in various points of interest around the city, thus communicating information to tourists through a dedicated mobile application when they are nearby. (Gretzel, Sigala, Xiang & Koo, 2015) Beacons are also used in Amsterdam to translate tourist signs in different languages, thus supporting tourists when it comes to guidance, while for the Amsterdam Arena sensors for better crowd management are being tested. (Cisco, 2014)

The "smart business" concept is also rising and refers to the complex business ecosystem that creates and supports the exchange of tourism resources and the co-creation of tourist experiences, mainly through a particularly high interconnection among the various stakeholders and the digitization of the most important business processes. A different aspect of the smart business component is that of the collaboration between public and private sectors, but in a different way, governments becoming more open and inclined towards technology, as infrastructure and data providers. In this context, the consumers' contribution to value creation and monitoring is recognized, so that they can even take over governance roles.

3. CONCLUSIONS

On a highly dynamic global market, the integration of smart technologies to create more personalized experiences becomes a critical issue so that any company needs it to remain competitive, and this applies especially to the tourism industry, where fierce competition and the high expectations of consumers induce the constant need of differentiation. In this context, the development of smart tourism seems to be a natural evolution, and the focus is on tourists as users of smart systems that support them through:

- anticipating their needs based on a number of factors and the development of recommendations regarding the choice of specific activities in a particular context (e.g. sights, recreational areas)
- enhancing tourist experiences by providing useful information, depending on the location, and also personalized, interactive services
- providing the opportunity to share their own travel experiences so as to help other travelers make decisions

The evolution of technology is stronger than ever, and tourism has all the attributes to be the pioneer industry for many of the new smart discoveries, so an increasing development of smart tourism is expected.

REFERENCES

[1] Buhalis D., Amaranggana A. – *Smart Tourism Destinations: Enhancing Tourism Experience Through Personalisation of Services*, Information and Communication Technologies in Tourism 2015: Proceedings of the International Conference in Lugano, Switzerland, februarie 2015, pp. 377–389

[2] Castaño R., Sujan M., Kacker M., Sujan H. – *Managing Consumer Uncertainty in the Adoption of New Products: Temporal Distance and Mental Simulation*, Journal of Marketing Research, vol. 45, 2008

[3] European Commission – *European Initiative on Smart Cities*, 2015; http://setis.ec.europa.eu/set-plan-implementation/technology-roadmaps/european-initiative-smart-cities

[4] Gretzel U., Koo C., Sigala M., Xiang Z. – *Special Issue on Smart Tourism: Convergence of Information Technologies, Experiences and Theories*, Electron Markets, vol. 25, nr. 3, 2015, pp. 175-177

[5] Gretzel U., Sigala M., Xiang Z., Koo C. – *Smart Tourism: Foundations and Developments*, Electron Markets, vol. 25, nr. 3, 2015, pp. 179-188

[6] Intercontinental Hotels Group – *Creating 'Moments of Trust'*, IHG Trends Report, 2014

[7] Neuhofer B., Buhalis D., Ladkin A. – *Smart Technologies for Personalized Experiences: A Case Study in the Hospitality Domain*, Electron Markets, vol. 25, nr. 3, 2015, pp. 243-254

[8] Ritzer G. – *Globalization: The Essentials*, Wiley-Blackwell, Oxford, 2011

[9] World Travel & Tourism Council – *Travel & Tourism Economic Impact 2017: World*, martie 2017

[10] http://www.hospitalitynet.org/news/4072364.html

[11] http://www.mirror.co.uk/tech/dubai-launch-passenger-carrying-taxi-9832324

[12] https://newsroom.cisco.com/press-release-content?type=webcontent&articleId=1488545

RURAL DEVELOPMENT PROGRAMME OF THE REPUBLIC OF CROATIA: HOW IT IS PERCEIVED BY YOUNG POPULATION?

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Abstract
Rural Development Programme of the Republic of Croatia for the Period 2014-2020 has a various aims, but certainly a major aim is development of rural areas. 95% of Croatian territories are rural areas. The current situation in these areas, is that there is high level of constant business pessimism and scepticism, and very high level of emigration to capital city/Adriatic coast, or more often, to developed EU countries. Therefore for this Programme or for projects financed through it, it is very important its perception by the potential beneficiaries and wider socio-economic stakeholders.
In this paper will be presented research, conducted among 98 students of the Polytechnic in Pozega, by questionnaire technique in year 2017. Students, so as most of young people in Croatia are in a specific situation: permanently high youth unemployment on one side and the possibility of mobility / departure in another EU country on other side. In this research, they give answers to questions on how they see and what they think about the Rural Development Programme, how they see their chance to develop and stay in Croatia etc. Findings obtained in the research, provide some clear guidance to decision-makers in the management of sustainable development of rural areas of Croatia.

Keywords: *Rural development, Sustainable development, management, EU projects.*

Classification JEL: ***O – Economic Development, Technological Change, and Growth***

1. INTRODUCTION

Syntagma of (sustainable) rural development, at least when talking about the authors in the Republic of Croatia has in recent years immanent and widespread in literature. The conventional approach to regional science has at its core an economic or econometric base (Ravetz, 2004).

Previously, the authors have mainly engaged in regional development issues, especially before moving from a socialist system of planned economy, and the appearance of the EU 4 freedoms and NUTS nomenclature. This change, brought swerve to rural development concept, which is increasingly present in the economic, geographical, social, political, agricultural and other literatures.

In praxis, lack of adequate and real support to balanced regional development, and the existence of only declarative and nominal support, doesn't result postitively for underdeveloped regions. The development of rural areas and its conservation is a challenge across the EU, not only in the new member states. For instanse, in the Republic of Croatia, this issue is trying to solve within the Program of Rural Development.

The goal of this paper is to present research of current situation of young people in Croatia, with special overiew on permanently high youth unemployment on one side and the possibility of mobility / departure in another EU country on other side. For this research, the examinees gave answers to questions on how they are informed about EU funds, about EU funds possibilities, and what they think about the Rural Development Programme, etc.

Main hypotheses are that most of the examinees believe that the're not well infromed, but they are optimistic on the possible positive effects of Rural Development Programme (and all EU funds aproach).

For a research purposes is used secondary research of available relevant scientific literature, and there is conducted primary research among 98 students by questionnaire technique in year 2017.

2. MAJOR FINDINGS

In this part are present only some of findings, that confirms/deny main hypothesis defined in this research.
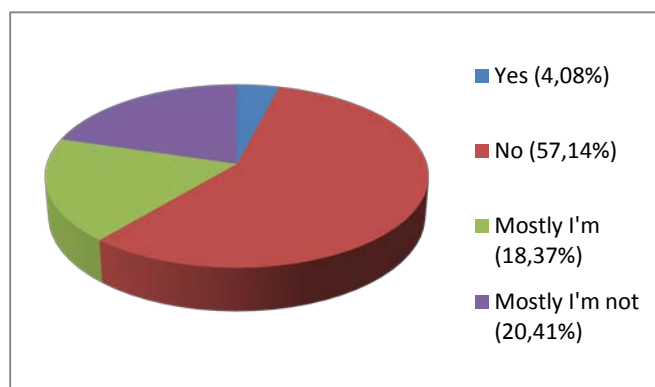
Figure 1 Do you think that you're well informed about Possibilities of EU funds?

Only 4,08% examinees believe that they aree well informed about EU funds, and 18,37% think that they are mostly good informed. It means that campaign of EU funds was not so succesfull among this population. Also, this fact means that next questions and answers are mostly based on assumptions. But this assumptions is important for following optimistic or pessimistic approach.
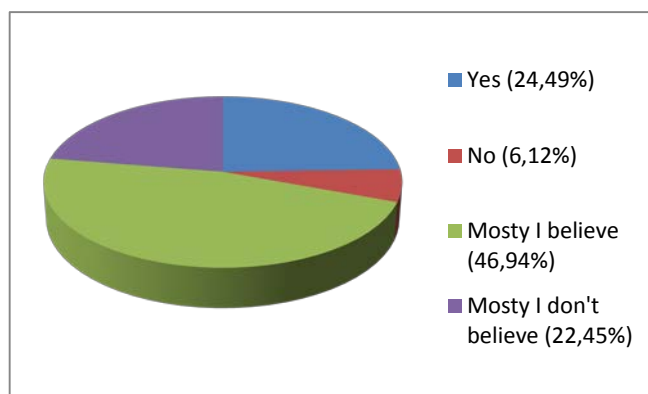
Figure 2 Do you believe in idea/concept of support through EU funds?

Almost 70% examinees believe (or mostly believe) in concept of support through EU funds. So they believe in basic idea, of funding the good projects and good ideas.
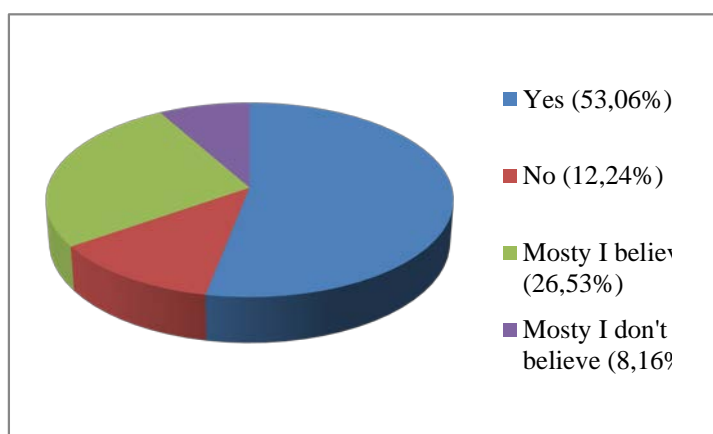
Figure 3 Do you think that EU funds could contribute to rural development of Republic of Croatia?

Almost 80% examinees believe in positive effects of EU funds on rural development. Which tell us, that this part of population is very optimistic on the EU funds effects.

3. CONCLUSIONS

According to research results, young people (student age), are optimstic to the potential of Regional development programme. At the same time, they believe, that they are not so good informed about EU funds possibilities, which is a clear sign to responsible for this area.

There is no study or research using amount of Structural Funds spent by each region, and related literature refers to programmed or used amounts (Coppola and Destefanis, 2007).

Differences in the EU between urban and rural areas are generally increased as a result of enlargement (Susanu, 2008). Developing countries seem to think that the more

goals there are, the more aid money they will receive. They are wrong. (The Economist, 2015). We came to the conclusions that even various, different implementation structures can lead to high absorption results (Markovič Hribernik and other, 2008).

REFERENCES

Coppola, G. and Destefanis, S. ; In Aiello, F. i Pupo, V., *Structural Funds and Economic Divide in Italy*, University of Calabria, Department of Economics and Statistics, *MPRA Paper No. 17853,* 2009

Markovič Hribernik, T. i dr., *Institutional Regulation and the effectiveness of absorbing EU funds: the experiences of Ireland*, Estonia and Slovenia, Zagreb, *Društvena istraživanja*, God. 17 (2008), br. 6 (98), (2008)

Ravetz, J. ; *Measuring regional sustainable development – a review of modeling tools in the UK*, Eco-Region NW position paper, 2004

Susanu, M., *Romanian Pattern in Absorption and Management of European Structural Funds: A Critical Analysis*, The Annals of the Dunarea de Jos University. Economics and Applied Informatics, 2008

The Economist, *Proposed development goals would be worse useless* [Internet], <available http://www.economist.com/news/leaders/21647286-proposed-sustainable-development-goals-would-be-worse-useless-169-commandments>, [Approach: 1-4-2016]. 2015

EVALUATION OF THE ENVIRONMENTAL DIMENSION OF SUSTAINABLE DEVELOPMENT IN THE EU COUNTRIES

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Abstract

Sustainable development is considered as a multidimensional concept. Sustainable development affects many spheres of countries life and development. In general, it consists mainly of the economic, social and environmental dimension. The relationships between the dimensions are, towards sustainability, quite complicated. The aim of this paper is to assess the environmental dimension of sustainable development in European Union countries using the selected indicator. Indicator using the we will evaluate the sustainable development is Environmental Performance Index "EPI", which can be considered as representative indicators of environmental dimension.

Keywords: sustainable development, dimensions of sustainable development, environmental dimension, Environmental Performance Index

Classification JEL: Q01, Q56

1. INTRODUCTION

Sustainable development is now perceived as a general concept applicable in all spheres of economic life [8]. Sustainable development is defined as such development that provides meeting the needs of present generations, without limited of meeting the needs of future generations (Barrow, 2006); (Demo et al., 2007). Without knowledge of past and current production and consumption models and accurately quantifying current needs is not possible to predict the needs of future generations.

Sustainable development is explained, or normatively defined, as a balance among so-called pillars of sustainable development (Demo et al., 2007); (Dušek, Pána et al., 2010): economic (oriented to economic growth and development), social (oriented the quality of life) and environmental (oriented do quality of environment) (Chovancová, 2015), sometimes completed also with the fourth, cultural pillar, and another pillar, i.e. a good public administration (Nováček, 2011); (Jeníček, 2010); (Huttmanová, 2015). The system of three pillars is possible to derive from the fulfilment of the condition of the basic definition of sustainable development according to Brundtland, who considers the pursuit of human needs to be the purpose of sustainable development (Jeníček, 2010); (Lačný, 2012); (Nováček, 2011). There are several ways of quantifying sustainable development (Maier et al., 2012); (Moldan, 2009); (Nováček, 2011); (Rusko et al., 210); (Huttmanová, 2015). Sustainable development or its dimensions can be quantified using the economic indicators (Adamišin, Tej, 2012); (napr. HDP per capita; The energy intensity of the economy,…) social indicators (unemployment rate, life expectancy,…) and environmental

indicators (Greenhouse gas emissions, Waste production …) as well as using the various combinations of these indicators (Adamišin, Kotulič, 2013); (Adamišin, Vavrek, 2015). In practice, there are synthetic and comprehensive indicators used for the evaluation of sustainable development (eg: Environmental Performace Index, Index of Sustainable Economic Welfare, etc.)

2. MATERIAL AND METHODS

The aim of this paper is to evaluate the measure of similarity of sustainable development in the European Union countries through indicator Environmental Performance Index characterizing environemntal dimension of sustainable development. The data were processed with the help of statistical software Statistica 12. Evaluation is realized by the method of cluster analysis. From among various methods of cluster analysis, we applied hierarchical cluster methods resulting, in graphic representation, in a tree diagram called dendrogram. For the measurement of distance among individual points, Euclidean distance and the method of the nearest neighbour, which are the most frequently applied in cluster analyses, were used.

3. RESULTS AND DISCUSSION

We watched a similarity of individual EU countries using the indicator Environmental Performance Index (EPI) and its selected sub-indicators. EPI index replaces ESI (Environmental Sustainability Index). Indicator EPI was created to:
- recognize the environmental problems
- capture trends in pollution control and natural resource management
- identify priority environmental issues
- identify where current policy achieves good results, as well as bad results
- provide a base for comparison between countries and sectors
- find similar countries and identify leaders and lagging countries
- and to identify the best measures and successful policy models.

Environmental Performance Index (EPI) is also referred to as an index of the impact on the environment is designed by calculation and aggregation of selected indicators representing data in the field of environment at the national level. These indicators are combined into nine categories, each of which is assigned to one of two main objectives. EPI values are expressed on a scale of 0 to 100 in a simple arithmetic calculation, where 0 is the farthest from the target (the worst value) and the value of the 100 best reflects the observed value (a value close to the target). In this sense EPI is a dimensionless indicator, because it is not expressed in standard units of measurement. EPI values achieved in the EU-28 for the assessment period are shown in the graph no. 1.
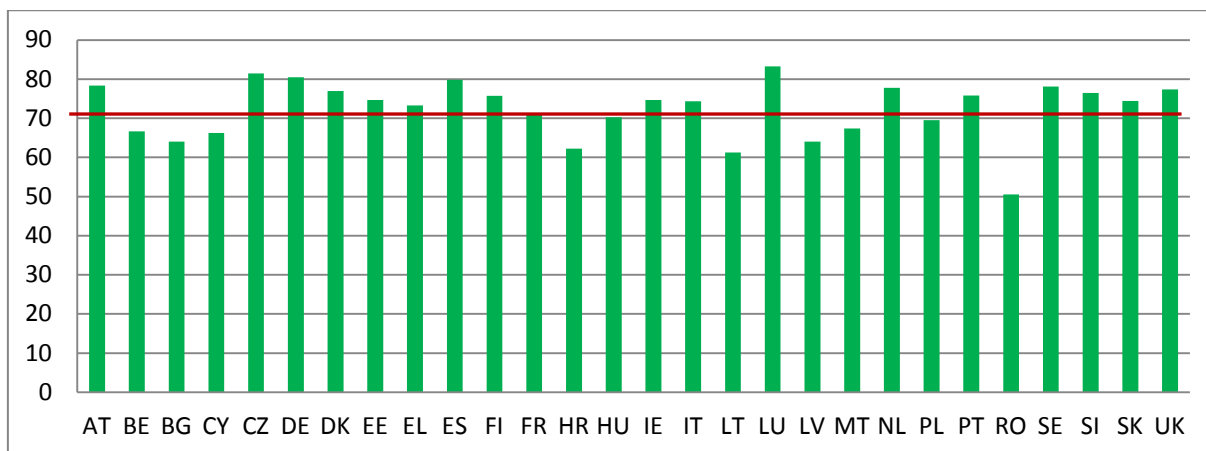
Graph no. 1 Achieved value of the indicator EPI in the EU (and the average value of the
indicator for the EU-28) in 2014
Source: own processing of data from Yale Center for Environmental Law and Policy

The graph no.1 shows that the highest value of the Environmental performance
index and the least negative impact on the environment achieves Luxembourg, followed by
Czech Republic and Germany. The most among the EU-28 of required values index
departs Romania.
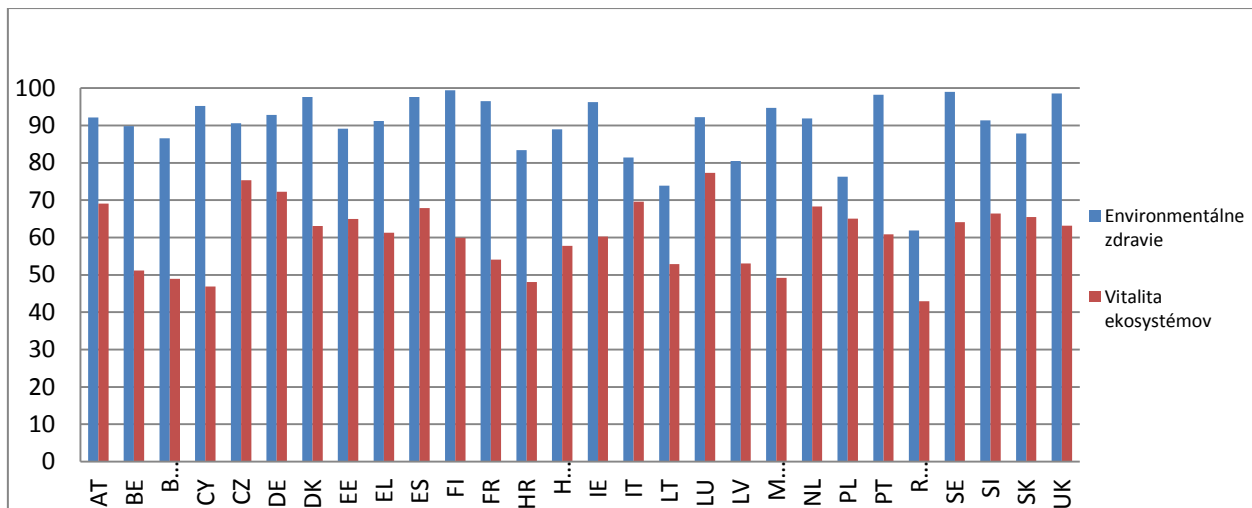
Graph no. 2EPI indicator values achieved at the level of the fundamental objectives of the
EU countries in 2014
Source: own processing of data from Yale Center for Environmental Law and Policy

The evaluation of individual fundamental objectives of this index (graph no.2), it is
obvious that EU countries perform better results in the field of Environmental Health that
in category vitality of ecosystems. Based on the obtained values EPI it can be concluded

that the countries of the European Union have the best elimination of the negative impacts on air quality, water, sanitation and health impacts in the area.

In assessing the partial results (graph no. 2), the highest value in the category of Environmental Health, was achieved in Finland and Sweden, and conversely the lowest in Romania. In the evaluation of the objective Vitality of ecosystems can be seen that the EU countries have lower values than the previous objective, which could indicate problems with ensuring the quality of the environment just in the field of ecosystems quality. The highest values of ecosystems Vitality achieved Luxembourg, Czech Republic and Germany, which is also reflected in the overall evaluation of EPI. Furthest away from the setpoint values in the objective Ecosystem vitality again reaches Romania. The average value achieved in the objective Environmental Health in the EU-28 is almost 90 and in the objective Vitality ecosystems 60.7. The Slovak Republic has the total value of EPI at 74.45 (in the objective of Environmental health reaches index value of 87.9, and in the objective Vitality of ecosystems value 65.5).

Based on the above it can be concluded that the Slovak Republic reaches the value of EPI index, based on its overall assessment as well as based on its partial objectives, the level of average EU-28th.

Using EPI we also evaluate the degree of similarity in the European Union. Cluster analysis we realized at the level of the main categories of Environmental performance index (Figure no.1).
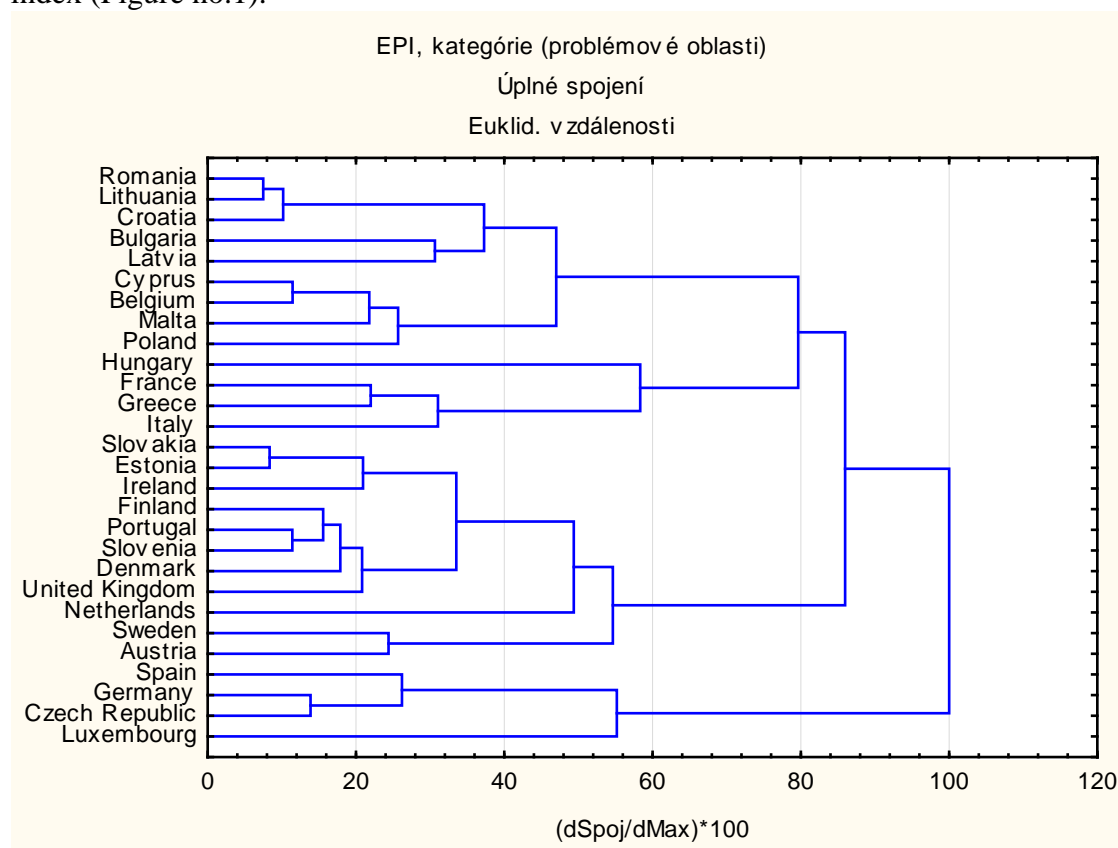
Figure no. 1 Dendrogram – EPI (categories level) in the EU countries (year 2014)
Source: own processing

Table no. 1 Clusters of EU countries evaluated by EPI (categories level)

Clusters rank according to EPI score	Countries	EPI score
1.	Spain, Germany, Czech Republic, Luxembourg	81,26
2.	Slovakia, Estonia, Ireland, Finland, Portugal, Slovenia, Denmark, United Kingdom, Netherlands, Sweden and Austria	76,36
3.	Hungary, France, Greece, Italy	72,24
4.	Romania, Lithuania, Croatia, Bulgaria, Latvia, Cyprus, Belgium, Malta, Poland	63,54

Source: own processing

Realized evaluation shows that within the European Union there are four relatively independent groups of countries that achieve a certain degree of similarity in environmental performance. These clusters of countries are listed in Table no.1. Slovak Republic in this evaluation shows a high degree of similarity with Estonia.

CONCLUSION

Way to sustainability achieving is long and so complicated. Similarly, it is also complicated the relationship between economic growth and environmental quality. On the one hand it is clear that long-term economic growth requires the use of natural resources (often limited and exhaustible resources). It leads to environmental degradation. On the other hand, economic growth enables the reduction of environmental pollution, and creates conditions for environmental problems solutions. Therefore it is understanding and evaluation of the environmental dimension of sustainable development a necessary part of sustainable development evaluatio, as well as searching for balance between environmental, economic and social dimension of sustainable development. Without conformity of these dimensions sustainable development can not be realized. Ensuring of dimensions compliance is part of the sustainability management and providing long-term and sustainable development.

REFERENCES

[1] ADAMIŠIN, Peter a Juraj TEJ, 2012. The analysis of the economic efficiency of regions on the level of nuts III and on the proportion of municipial taxation. In: Polish journal of management studies. Vol. 5 (2012), s. 60-77. ISSN 2081-7452.

[2] ADAMIŠIN, Peter a Rastislav KOTULIČ, 2013. Evaluation of the agrarian businesses results according to their legal form. In: *Agricultural economics*. Vol. 59, no. 9 (2013), s. 396-402. ISSN 0139-570X.

[3] ADAMIŠIN, Peter a Roman VAVREK, 2015. Analysis of the links between selected socio-economic indicators and waste management at the regional level in the Slovak republic. In: *5th Central European conference in regional science: conference proceedings.* Košice : Technical university of Košice. p. 1 – 9. ISBN 978-80-553-2015-1. Available to internet: http://www3.ekf.tuke.sk/cers/files/zbornik2014/PDF/Adamisin.pdf

[4] BARROW, C.J., 2006. *Environmental Management for Sustainable Development*. Routledge Taylor &Francis Group, London, New York. 454 p. ISBN 978-0-415-36534-5.

[5] DEMO, Milan, Ondrej HRONEC, Monika TÓTHOVÁ et al., 2007. *Udržateľný rozvoj: život v medziach únosnej kapacity biosféry*. Nitra: Slovenská poľnohospodárska univerzita, ISBN 978-80-8069-826-3.

[6] DUŠEK, Jiří, Lubomír PÁNA et al. 2010. *Udržitelný rozvoj v evropskych regionech*. České Budejovice : Vysoká škola evropských a regionálních stúdií, ISBN 978-80-86708-90-4.

[7] CHOVANCOVÁ, Jana. 2015. Environmental management systems – incentives and bariers of implementation in the Slovak enterprises. In: Ecology and environmental protection, environmental legislation, multiratelar relations and funding opportinities : ecology, economics, education and legislation. Vol. 2 : conference proceedings. 15th international multidisciplinary scientific geoconferences SGEM 2015. Sofia : STEF92 Technology, 2015. S. 205-211. ISBN 978-619-7108-40-7.

[8] HUTTMANOVÁ, Emília. 2015. *Analytický pohľad na manažment udržateľnosti rozvoja krajín európskej únie v kontexte globálnych zmien. Habilitačná práca. Prešov : FM, 2015. 217 s.*

[9] JENÍČEK, Vladimír a kol., 2010. *Vyvážený rozvoj na globální a regionální úrovni*. Praha: Nakladatelství C. H. Beck, ISBN 978-80-7400-195-6.

[10] LAČNÝ Martin, 2012. Environmentálna, sociálna a ekonomická oblasť spoločenskej zodpovednosti podnikov. *In: Folia oecologica 7. Prírodné vedy*. Roč. 54, č. 7 (2012), p. 55-65. ISSN 1338-080X

[11] MAIER, Karel et al., 2012, Udržitelný rozvoj území. Praha: Grada Publishing, ISBN 978-80-247-4198-7.

[12] MOLDAN, Bedřich. 2009. Podmaněná planéta. Praha: Univerzita Karlova v Praze, Nakladatelství Karolinum, ISBN 978-80-246-1580-6.

[13] NOVÁČEK, Pavel, 2011. *Udržitelný rozvoj*. Olomouc: Univerzita Palackého, ISBN 978-80-244-2795-9.

[14] RUSKO, Miroslav, Pavol ANDREJOVSKÝ, Martin BOSÁK a Martin ROVŇÁK, M. 2010. Economical aspects of environmental safety. In: *Vedecké práce Materiálovotechnologickej fakulty STU v Bratislave so sídlom v Trnave*. No. 29 (2010), s. 83-89. ISSN 1336-1589.

DECOUPLING IN THE FRAME OF SUSTAINABLE DEVELOPMENT

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Abstract
Sustainable development is a way of development of human society, which brought into conformity *economic and social progress with full preservation of the environment. The economy can not exist outside society and its institutions. Society and economy can exist only as part of the environment (environmental pillar).* This reveals *interdependence between the various pillars (or dimensions) of sustainable development. The aim of this paper is to evaluate decoupling in the frame of selected dimensions of sustainable of development in the EU countries.*

Keywords: sustainable development, dimensions of sustainable development, decoupling, European Union Countries

Classification JEL: Q01, Q56

1. INTRODUCTION

Economic activities of society are often developed at the expense of quality of environment (Chiras, 2012). The issue of economic prosperity and a high quality of environment is currently one of the most debatable. It seems very difficult to achieve high economic growth without negative effects on the environment respectively without negative impacts to the environment (Hronec, 2000; Adamišin, 2007). Dimensions of economy and ecology often stand facing each other and the development of one of them is done often at the expense of the other (Adamišin, Kotulič, 2013); (Adamišin, Vavrek 2015). It is therefore necessary to look for ways to develop economic life without harming the environment, as the society responds to changes in environmental quality will be much more sensitive than in the past (Železník, Paulíková, 2012). This may be due to long-term accumulation of problems in certain localities, but also an effort to achieve better quality of life.
Sustainability problem persists in society for many years. A comprehensive definition of sustainable development first appeared in the report of the Club of Rome (1972), which states that sustainable development is a global equilibrium state in which the population of the earth and capital are maintained on more or less constant level and tendencies influencing the growth or decline in these variables must be kept under close control. For the most widely used definition of sustainable development is generally considered the definition given in the report of the World Commission on Environment and Development

(1987), that sustainable development means the developing satisfying the needs of current generations without compromising the ability of meeting the needs of future generations. In practice, there are still many views and definitions of sustainable development. Sustainability depends on many current issues that has grown from the local dimension into a global, world problems of mankind (Demo, et al., 2007); (Demo, et al., 1999) (Barrow, 2006).

Sustainability is a multidimensional sphere of enforcement and formation of human activities. Synergy of environmental, social and economic aspects of the environment shapes the lives of the individuals whose quality depends on (his) previous decisions (decisions of the society, decisions made by previous generations) in a given space (Bednárová, 2013). Quality of life was thus formed in space and time (Dubravská, Kotulič, 2014); (Tej, 2011). These two dimensions together with mutual human relationship with the environment and the surroundings are critical factors that shape and affect the quality of the environment and quality of life in it. Because of the relatively complicated quantification of these quantities, to measure the sustainability is used complex, set of indicators, which are divided into four basic groups. (Demo, et al., 2007); (Demo, et al., 1999); (Jeníček, 2010); Maier, 2012) These are the indicators:

- economic,
- environmental,
- social,
- institutional.

Their synergy offers the opportunity for a comprehensive assessment of the state of sustainability in the selected region. But in practice, in the frame of sustainable development dimensions there is also decoupling.

2. MATERIAL AND METHODS

The aim of this paper is to evaluate decoupling in the frame of economic dimension and environmental dimension of sustainable of development in the EU countries (28 EU countries average). The environmental dimension is represented by indicator Environmental Performance Index. Economic dimension is represented by indicator GDP per capita. Evaluation has been realized using the regression analysis. Data (year 2014) source is Eurostat and Yale Center for Environmental Law & Policy (YCELP).

3. RESULTS AND DISCUSSION

Using the regression analysis we quantify the relationship between variables GDP per capita and the environmental performance index. Data visualization and regression model are presented in Graph 1.
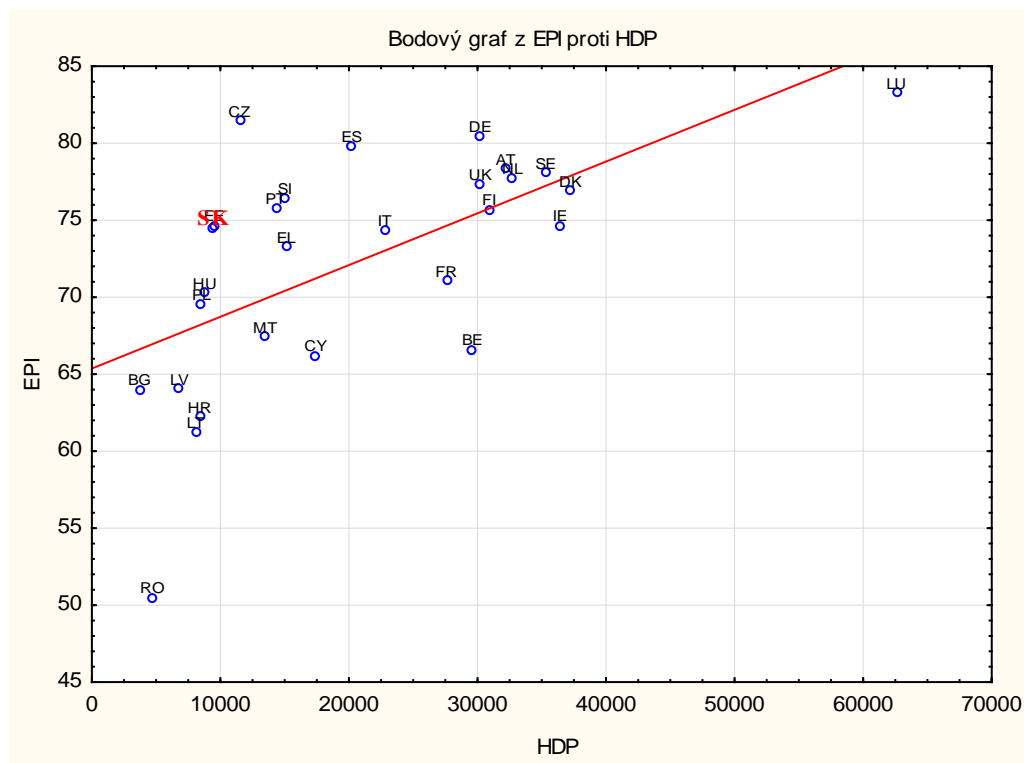
Graph no. 1 The regression model - GDP per capita and the Environmental Performance
Index (relationship) in the EU-28 countries
Source: own processing; data: Eurostat and YCELP

Table no. 1 Results of regression analysis - GDP per capita and EPI (EU-28 countries)

	Results of regression with the dependent variable: EPI (EPI GDP data18112014) R= ,61983481 R2= ,38419519 Edited R2= ,36051039 F(1,26)=16,221 p<,00044 Standard error of the estimate: 5,9141					
N=28	b*	St. error b*	b	St. error b	t(26)	p-value.
Abs.m			65,36489	2,064832	31,65628	0,000000
GDP	0,619835	0,153899	0,00034	0,000083	4,02755	0,000435

Source: own processing; data: Eurostat and YCELP

There is a form of regerssion model:

$$y^{++} = 65{,}3649^{++} + 0{,}0003^{++}x$$

Model (Table no. 1) shows that the one euro increase of the indicator GDP per capita
causes an increase of the 0.0003 units of EPI. Based on the results of the F test and T test,
we conclude that this is a high reliable model, in the field of individual regression
parameters, as well as a whole.

4. CONCLUSIONS

Based on the realized analysis we could conclude, that among the analyzed parameters was demonstrated relationship – the level of environmental performance (expressed by EPI) is dependent on the level of economic performance (expressed by GDP per capita). In this case, there is the decoupling between the different dimensions only in the field of indicators growth rate. By increasing of economic level may cause also increasing of the environmental performance in the EU countries. It is however possible to assume, for compliance with the conditions ceteris paribus (with respect to the other disregarded factors that could have an impact on these changes). Based on the results of this regression analysis can be determined by the economic performance of the country needed to achieve the desired level of environmental performance.

REFERENCES

[1] ADAMIŠIN, Peter 2007. Ekonomické prístupy k udržateľnému rozvoju. In: *Teoretické aspekty prierezových ekonomík IV* : *zborník vedeckých prác*. Bratislava: Vydavateľstvo Ekonóm, s. 4-8. ISBN 978-80-225-2472-8.

[2] ADAMIŠIN, Peter a Rastislav KOTULIČ, 2013. Evaluation of the agrarian businesses results according to their legal form. In: *Agricultural economics*. Vol. 59, no. 9 (2013), s. 396-402. ISSN 0139-570X.

[3] ADAMIŠIN, Peter a Roman VAVREK, 2015. Analysis of the links between selected socio-economic indicators and waste management at the regional level in the Slovak republic. In: *5th Central European conference in regional science: conference proceedings.* Košice : Technical university of Košice. p. 1 – 9. ISBN 978-80-553-2015-1. Available to internet: http://www3.ekf.tuke.sk/cers/files/zbornik2014/PDF/Adamisin.pdf

[4] BARROW, C.J. Environmental Management for Sustainable Development. Routledge Taylor &Francis Group, London, New York, 2006. 454 p. ISBN 978-0-415-36534-5.

[5] BEDNÁROVÁ, L. Vplyv environmentálnych informácií na rozvoj spoločnosti. In: Marketing manažment, obchod a sociálne aspekty podnikania: zborník recenzovaných príspevkov z 1. medzinárodnej vedeckej konferencie : Košice, 24.-25. október 2013, ISBN 978-80-225-3730-8

[6] CHIRAS, D.D. Environmental Science. Jones & Bartlett Learning, 2012, 672 p. ISBN 78-1449645311.

[7] DEMO, M. et al. Udržateľný rozvoj: život v medziach únosnej kapacity biosféry. 1. vyd. Nitra : Slovenská poľnohospodárska univerzita, 2007. 439 s. ISBN 978-80-8069-826-3.

[8] DEMO, M., P. BIELEK and O. HRONEC, 1999. *Trvalo udržateľný rozvoj*. Nitra : Slovenská poľnohospodárska univerzita, ISBN 80-7137-611-6.

[9] DUBRAVSKÁ, M. and R. KOTULIČ. Benefits of environmental management systems implementation in the conditions of the Slovak republic. In: Ecology, economics, education and legislation: conference proceedings, volume III : 14th international multidisciplinary scientific geoconference SGEM 2014. Sofia: STEF92 Technology, 2014. p. 67-74. ISBN 978-619-7105-19-3.

[10] HRONEC, Ondrej a kol., 2000. *Prírodné zdroje.* Košice: Royal Unicorn, ISBN 80-968128-7-4.

[11] JENÍČEK, V. et al. Vyvážený rozvoj na globální a regionální úrovni. Praha : Nakladatelství C. H. 2010. 132 s. ISBN 978-80-7400-195-6. Beck, 2010. 132 s. ISBN 978-80-7400-195-6.

[12] MAIER K.et al. Udržitelný rozvoj území. Praha: Grada Publishing, 2012, ISBN 978-80-247-4198-7.

[13] TEJ, J. Regionálny manažment - strategická forma partnerstva pri dosahovaní vyššej regionálnej konkurencieschopnosti. In Konkurencieschopnosť a regionálny rozvoj. Košice : Technická univerzita v Košiciach, Ekonomická fakulta. 2011. ISBN 978-80-553-0111-2. p. 49-171

[14] ŽELEZNÍK, O. and A. PAULÍKOVÁ. Prevention and remediation activities at the solution of projects participating in environmental protection. In: Acta Montanistica Slovaca, Roč. 17, č. 3(2012), s. 184 - 188, 2013 ISSN 1335-1788.

[15] Yale Center for Environmental Law & Policy Available on: http://epi.yale.edu/

FOOD AND NUTRITION SECURITY – KEY DRIVERS FOR SUSTAINABLE DEVELOPMENT

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Abstract

This study emphasizes the role of food and nutrition security in sustainable development and the complex relations between the two, considering that one of the sustainable development goals is to achieve food security and to improve nutrition. The need of pursuing such an issue has emerged from the fact that, while there is a strong evidence base to inform our knowledge of food security, we know little about nutrition security. The aim of the study is to investigate food security beyond the statistical data that show an average trend, trying to answer the question whether food security and nutrition security are achieved in Romania. The main findings reveal that not all people have economic access to sufficient, safe and nutritious food, while 15.3 percent live with less than $2.9 a day and the average food consumption in Romania corresponds to a budget of $3.28 a day. The study is useful because it brings a clearer understanding of the links between food security, nutrition and sustainability, and emphasizes, in the end, that nutrition is a significant driver of food security, and, in turn, the latter is a pillar of sustainable development.

Keywords: sustainable, food security, nutritious security, malnutrition, poverty

Classification JEL: Q180

1. INTRODUCTION

Ensuring food security and improved nutrition are the goals of sustainable development, expressed at the 2030 Agenda for Sustainable Development of the United Nation (UN, 2015). Challenges affecting nutrition are significant and call for developing a good understanding of the drivers contributing to food insecurity and malnutrition.

In Romania, macroeconomic indicators report that food security is achieved. Still, problems with poverty, especially in rural areas, lead to imbalanced diets, as forms of malnutrition. Therefore, the research objectives of this piece of research are to analyze the food and nutrition security as sustainable development drivers, and the nutrition and diet structure of poor people.

FAO monitors global progress towards reducing hunger at global level and annually reports the State of Food Insecurity in the World (SOFI publication series). Reports of the Economist Intelligence Unit assess the global food security index, considering food affordability, availability and quality and safety. Countries are ranked on a scale from 0 to 100. Romania ranked 42nd out of 113 countries, in 2016 (The Economist Intelligence Unit, 2016).

The need of this investigation relies in the fact that, even though statistical data show that food security is achieved (Istudor and others, 2014), nevertheless they show an

average trend, aside from extremes. The number of people living in poverty and who do not have access to sufficient and nutritious food should be investigated.

Therefore, the hypothesis tested in this article is "food security problems in Romania are related to access and not to availability". World Bank has been firstly expressed this idea in 1986, considering that "problems in food security do not necessarily result from inadequate food supply, as is widely believed, but from a lack of purchasing power of household".

2. FOOD SECURITY AND NUTRITION SECURITY IN ACTION

As statistical data analysed in this paper show (FAOSTAT, 2017), food security is achieved in Romania, considering that: i) the dietary energy supply is higher than the dietary energy requirements; ii) the consumption of protein is 106 grams per person per day, higher than FAO's recommendations; iii) the GDP per capita has an upward trend; iv) the cereals imports dependency ratio is negative, which leads Romania among the net exporters of cereals; v) no significant values of underweight adults and children have been reported. Nevertheless, these indicators reports the average values, leaving behind people who do not have economic, social and physical access to sufficient and nutrition food. This analysis is meant to reveal the answers to the research question whether all people in Romania have physical and economic access to food.

The answer to this question should be searched in the number of people who do not have economic access to food, because they live in poverty. The international poverty line is US$1.90 a day in income or consumption expenditure (World Bank, 2016). In Romania, 15.3 percent of people live with less than $2.9 a day (National Institute of Statistic, 2015, p.172). Almost half of Romanian people live with less than $6.3 a day and they are grouped in the first four quintiles of income. We draw the conclusion that not all people in Romania have physical and economic access to food, since 15.3 percent live with less than $2.9 a day.

To sustain this claim and to see whether the food is sufficient, safe and nutritious, the structure of the diet is analysed, considering the statistical data (National Institute of Statistic, 2015, p.215). The findings report that the average consumption corresponds to a budget of $3.28 a day, considering the average prices of food in Romania. 26.3 percent of people with income below $4 a day are excluded from this pattern of consumption. They spend about 72 percent for food, meaning a budget of $1.08 for the first quintile of income and $2.52 for the second one. Coming back to the study hypothesis, "food security problems in Romania are related to access and not to availability" is validated.

3. CONCLUSIONS

After analyzing the statistical data, we draw the conclusion that food security is assured in Romania; nonetheless many poor people do not share in this situation. They suffer from a lack of food security, caused mainly by a lack of purchasing power. Considering the global public health problems associated with malnutrition, peoples' diets must be not only sufficient, but also balanced in macro and micronutrients. This leads to

the conclusion that nutrition is a significant factor of food security and the starting point for achieving food security is ensuring nutrition security first.

REFERENCES

Istudor, N., Ion, R.A., Sponte, M., Petrescu, I.E. *Food Security in Romania – A Modern Approach for Developing Sustainable Agriculture.* Sustainability, 6, 8796-8807. 2014.

National Institute of Statistic. *Romanian Statistical Yearbook.* 2015.

The Economist Intelligence Unit. *Global Food Security Index 2016*; Economist Intelligence Unit: London, UK, 2016.

UN. *Transforming our world: the 2030 Agenda for Sustainable Development.* A/RES/70/1. 2015.

World Bank. *Poverty and Shared Prosperity 2016: Taking on Inequality.* Washington. 2016.

ORGANIZATIONAL PERFORMANCE IN ORGANIZATIONS FROM A HRM PERSPECTIVE

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Abstract

The organizational performance is a crucial vector in an increasingly competitive and globalized markets. Measuring organizational performance is achieved through a set of indicators covering different areas of the organization (financial, economic, social, cultural, etc.). Reaching adequate levels of these performance indicators depends on the quality of organization' human resources. Human resource is the key factor that differentiates the organization from other organizations and allows them to meet its objectives. Human resource must be managed effectively to achieve anticipated performance. This paper aims to conduct a research on impact of human resources management in achieving organizational performance. Based on a multi-dimensional model of performance measurement, the paper highlights significant correlations established between the effective human resources management and organizational performance.

Keywords: *organizational performance, HRM, measuring performance, multi-dimensional model.*

Classification JEL: *L25, O15*

1. INTRODUCTION

In recent years, both researchers and practitioners have shown a growing concern about the link between HRM and organizational performance. Rogers and Wright (1998) notes that academic research has tried to demonstrate the HRM impact on firm performance, studying the relationship between different areas of HRM and performance.

Based on exploratory research on literature and using inductive and deductive methods, in this paper we intend to create a model to determine the impact of HRM on organizational performance. Paper structure have five sections. The first section sets out some introductory elements. The second section provides a brief exploratory research on the relationships that can be established between HRM indicators and organizational performance indicators. In the third section we describes the key elements of HRM in order to achieve organizational performance. In the fourth section we developed a system of indicators of HRM. This system is placed in front of a measuring organizational performance system. Section five concludes and presents future research directions.

2. RELATIONS BETWEEN HRM INDICATORS AND ORGANIZATIONAL PERFORMANCE INDICATORS

In their studies on the relationship between human resource practices and organizational performance, Dyer and Reeves (1995), Paauwe and Richardson (1997), Rogers and Wright (1998), Guest et al. (2003), Chen, Chang and Hwang (2005), Wright et al. (2005), Switzer and Huang (2007), Zula and Chermack (2007), Bontis and Serenko (2009), Waseef and Iqbal (2011), Sitnikov and Bocean (2013) concluded that human resource practices have a great influence on organizational performance.

Rogers and Wright (1998) consider that the study of the relationship between the HRM analysis models and measurement of performance models is more useful than the identification of a single connection between a composite index of HRM and a composite index measuring organizational performance. We believe this approach is most appropriate. Therefore in this paper we build a model which confront a system of HRM indicators with a system of indicators of measuring organizational performance.

3. HRM Key elements in order to achieve organizational performance

In all models of organizational diagnosis, human resources represent an important vector for success of an organization. Often management decisions can generate feelings of frustration, discontent and distrust among employees, creating a negative climate, having a potentially negative effect on overall organizational performance (Bocean, 2011). To avoid this, it must be respected four essential HRM elements in order to achieve organizational goals and overall performance (Dessler, 2016): value, rarity, imitability, efficiency. If the organization take into account these factors, human resources will be considered as assets and not just simple items of expenditure (Torrington et al, 2014).

4. DEVELOPING A MODEL FOR ANALYZING THE CORRELATIONS AMONG INDICATORS

Based on the essential HRM elements and previous research, we have developed a system of HRM indicators. In the same time we have selected organizational performance indicators based on collected financial information from companies listed on Bucharest Stock Exchange. The indicators included in the model are shown in Table 1.

This model will be the basis of empirical research to be carried out among organizations of the Romanian economy. The model is adaptive because it allows use of those indicators for which exist information. The model is also dynamic because it involves the calculation of correlation between the HRM indicators and organizational performance indicators for different periods of time. Based on research conducted using this model we will determine the impact of HRM variables on organizational performance variables.

5. CONCLUSIONS

Universal application of models to determine the impact of HRM on organizational performance by calculating a composite index to characterize these two main variables is cumbersome and often irrelevant given that many influences are lost when calculate composite index. In our opinion it is more efficient an analytical approach to the detriment

of a synthetic approach. It can use the synthetic approaches (calculation of composite indicators), but a full analysis unquestionably requires an analytical approach by studying correlations between individual indicators from the two areas studied.

Table 1. Model for determining the impact of HRM on organizational performance

Indicator	Category		Category	Indicator
Productivity (per employee) - ratio between turnover and number of employees	Productivity indicators		Rentability indicators	The evolution of gross result (Income-expenses)
				The evolution of net result
Productivity (per employee) - ratio between profit organization and number of employees				Return on assets (ROA)
				Return on equity (ROE)
Productivity (per employee) - ratio between added value and number of employees				Return on sales (ROS)
				Return on investment (ROI)
The cost with an employee	Indicators of cost		Growth indicators	Evolution of turnover
The rate of wage costs (ratio between labor costs and total operating costs)				Evolution of the number of employees
The rate of wage costs (ratio between labor costs and turnover)				Evolution of the assets
The average cost of recruitment	Indicators on recruitment		Liquidity indicators	Current liquidity ratio
The average number of applications received				Quick liquidity ratio
The average time used for recruitment				Immediate liquidity ratio
The average time spent for the development of skills and abilities	Indicators on training and professional development		Leverage indicators	Debt-to-equity
Satisfaction index of persons participating in a training program				Debt-to-assets
The cost of training per employee				
The percentage of employees in total employees is considered "highly motivated"	Indicators of motivation		Efficiency indicators	Total asset turnover
Satisfaction of employees				Working capital turnover
The average time for promotion				Receivables turnover
The average wage in the organization	Indicators of reward		Operational indicators	Labor productivity
Wage package within the organization				Net profit created by an employee
Employee retention rate	Indicators of loyalty		Market value indicators	Adjusted Tobin Q (TQ)
Average duration of employment				Price earnings ratio (PER)
Leavers organization				Price to sales (P/S)
The percentage of employees who would be willing to recommend the organization to friends as a very good job				Price to book value (P/BV)

Source: Adapted from Carton and Hofer, 2006; Bocean, 2015

Based on exploratory research on literature and using inductive and deductive methods, we create in this paper a model for determining the HRM impact on organizational performance. During further research we intend to test the model within Romanian companies and to improve it based on the data which we collect and on the interpretation of the results.

REFERENCES

Bocean G.C. 2011. *Project based organization – an integrated approach*, Management & Marketing, Vol. IX, Nr. 2, pp. 265-273.

Bocean C.G. 2015. *Managementul resurselor umane*. Editura Pro Universitaria, Bucureşti

Bontis, N.; Serenko, A. 2009. *The moderating role of human capital management practices on employee capabilities*, Journal of Knowledge Management, 11(3), pp. 31-51.

Carton, R.B.; Hofer C.W. 2006. Measuring organizational performance. Unpublished, Edward Elgar, Northampton, MA, USA.

Chen, H.M.; Lin, K.J. 2005. *The role of human capital cost in accounting*, Journal of Intellectual Capital, 5(1), pp. 116-130.

Dessler, G.2016. *Human Resource Management* (15nd revised edn), Prentice-Hall, Pearson Education Australia.

Dyer, L.; Reeves, T. 1995. *Human resource strategies and firm performance: What do we know and where do we need to go?* Paper presented at the 10th World Congress of the International Industrial Relations Association, Washington, DC.

Guest, E.D.; Michie, J.; Conway, N.; Sheehan, M. 2003. *Human Resource Management and Corporate Performance in the UK*, British Journal of Industrial Relations, 41(2), pp. 291-314.

Huselid, M. A. 1995. *The impact of human resource management practices on turnover, productivity, and corporate financial performance*. Academy of Management Journal, 38(3), pp. 635-672.

Mondy, W. 2013. *Human Resource Management*, Pearson Education.

Rogers, W.E., Wright P.M. 1998. *Measuring organizational performance in strategic human resource management: Looking beyond the lamppost*. CAHRS Working Paper #98-24. Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies.

Sitnikov, C.S. and Bocean C.G. 2013. *Relationships among social and environmental responsibility and business,* Amfiteatru Economic, Nr. 7s, Vol. XV, pp. 759-768.

Switzer, L.N.; Huang,Y. 2007. *How does human capital affect the performance of small and mid-cap mutual funds?* Journal of Intellectual Capital, 8(4), pp 666-681.

Torrington, D.; Taylor, S.; Hall, L. 2014. *Human Resource Management*, Fianancial Times Prentice, New Jersey.

Waseef J.; Iqbal S. 2011. *Impact of Human Capital Management on Organizational Performance*. European Journal of Economies, Finance and Administrative Sciences 34, pp. 55-69.

Wright, P.M.; Gardner, T.M.; Moynihan, L.M.; Allen, M.R. 2005. *HR practices and firm performance: Examining causal order*, Personnel Psychology, pp. 406-466.

Zula, J.K.; Chermack, J.T 2007. *Integrative Literature Review: Human Capital Planning: A Review of Literature and Implications for Human Resource Development*, Human Resource Development Review, 6(245).

"DREAM BIG!" :ROMANIAN CERTIFICATION IN ECOTOURISM DESTINATIONS

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Abstract
Motto" Certification programs in the tourism industry serve as important tools for distinguishing genuinely responsible companies, products, or services from those that are merely using "eco-" or "sustainable" as a marketing tool to attract consumers" TIES(International Ecotourism Society)

The plan for a sustainable future is supported by the EU 2020 strategy (EC 2010), a ten-year scheme for growth and jobs. One of its key objectives is to address the need for sustainable and inclusive growth through the promotion of a competitive and greener economy in the EU [1].
The latest statistics provided by Eurostat show that the EGSS (Environmental Goods and Services Sector) represents approximately 2% of total EU employment.
Therefore, fostering job creation in the green sector, promoting mobility and supporting industrial restructuring in close cooperation with the social partners and the businesses make green growth a potential solution to the current unemployment crisis. The transition towards sustainable growth and development could also be made more efficient through innovative green technologies and better, more sustainable, management of resources.

Keywords: *certification, consumer ecotourism, patterns, sustainable tourism*

Classification JEL: *L83, Z32*

1. INTRODUCTION

About the importance of certification in ecotourism destinations, in general terms, certification can be defined as "a voluntary procedure that assesses, audits and gives written assurance that a facility, product, process or service meets specific standards. It awards a marketable logo to those that meet or exceed baseline standards"[2].

Today certification is a world-wide general phenomenon, interesting all field of industry and economic activities.

Regarding environmental standards, the certification wave began with the Rio world environmental summit of 1992, and the subsequent "Agenda 21", both with huge global mediatic attention, which substantially asked for the diffusion of an environmental awareness and responsibility in all sectors of economy. ISO 14001, the first worldwide environmental certification system, was created in 1996 in the middle of this process.

2. PAPER BODY

Looking at the tourism sector, nowadays there are many types of certifications in function, which can be grouped in three categories:

- **quality certification**; categorizes tourism service providers (hotels, restaurant) based on a ranking system representing increasing levels of quality (The stars system for Hotels, the Michelin guides..)

- **ecotourism certification**, the first of which is probably the Blue Flag certification system started in 1987 in Danemark (now present worldwide) to rank the environmental sustainability of beaches;

- **sustainable tourism certification**, which mainly developed in the years 2000 and had a key development moment in the creation of the Sustainable Tourism Stewardship Council (STSC).

Looking at ecotourism certification and sustainable tourism certification, the general and primary advantage is that "*Certification sets standards and helps distinguish genuine ecotourism and sustainable tourism businesses from others that make empty claims. This helps to protect the integrity of these concepts*"[3].

As considering the *current trends in Ecotourism and ecotourism certification*, the need to fight "greenwashing" – the practice of overestimate and overpromote the sustainability and environmental approach of an operator, has increased in the last years the practice of certification, in order to protect those tourist businesses, products and destination which approach seriously sustainability and environment.

However, together with the benefits of the functioning certification systems, some challenges have also arise:

- Tourism companies are sometimes disappointed in noticing a scarce effect of certification on sales and turnover;

- Generally, the absence of monitoring and evaluation tools affects the possibility to correctly estimate the economic impact of certification on local development, but also, confirming the point before, on certified companies;

- The "label jungle" phenomenon caused by the proliferation of labels and certified systems (some of which have stayed on the market for only a short time), starts to bother the consumer who starts being skeptical and suspicious about labels, in lack of specific information campaign about certification.

To these challenges, **the certification sectors** has started to react:

- **Ecotourism** can occur not only as a new type of tourism which generates added value for the tourism activity in the area, but also as a powerful regulator between all systems overlapping at the level of a destination, included certification criteria;

- **It is necessary** to organize its broader action range in the sense of developing tourism products based on consumer characteristics and the specificity of the area to develop methods and procedures, an important starting point in customer satisfaction;

The **promotion of a unitary idea** about Romania's ecotourism image is necessary, as well as it should be completed with secondary images according to fields, which have to be consistent with the unitary image. A branding program should be based on an integrated policy through which to communicate and execute in a coordinated and repeated manner motivating themes that differentiate Romania from other countries.

An umbrella mark (a ecotourism nation mark) is necessary, which can be used as a reference by all the other secondary marks developed in various fields and/or areas.

The product, corporation, city, ecotourism destination or region, district marks must be an integrand part of the national brand/mark. It, in its turn, may be integrated into a supra-national brand, in our case Central and Eastern Europe or the European Union.[10]

- **The goal of achieving sustainable tourism** should be subordinated to national and regional plans of economic and social development[11].

3. CONCLUSIONS

United Nations declares 2017 the International Year of Sustainable Tourism for Development[12].The UN General Assembly has approved the adoption of 2017 as the International Year of Sustainable Tourism for Development. "*The declaration by the UN of 2017 as the International Year of Sustainable Tourism for Development is a unique opportunity to advance the contribution of the tourism sector to the three pillars of sustainability - economic, social and environmental, while raising awareness of the true dimensions of a sector which is often undervalued" UNWTO Secretary General, Taleb Rifai.*"[12].

Sustainability has three independent aspects for tourism as well as for other industries: economic, social-cultural and environmental. The sustainable development implies permanence, meaning that the sustainable tourism represents the optimal usage of resources (including the biological diversity), the minimisation of the negative economic, social-cultural and ecologic impact, and the maximisation of benefits on the local communities, the national economy and the preservation of nature. As a natural consequence, sustainability refers also to the necessary managerial structures in order to fulfil these purposes.

REFERENCES

[1] Jean Lambert, Member of the European Parliament Green Growth: *Promoting Solutions towards Better Sustainability and Competitiveness*
http://necstour.eu/event/green-growth-promoting-solutions-towards-better-sustainability-and-competitiveness

[2] Honey, Martha and Rome, Abigail (2000), "Protecting Paradise: Certification Programs for Sustainable Tourism and Ecotourism" (Washington, D.C.: Institute for Policy

Studies, October 2001). Available at: http//www.conservationfinance.ort/Documents/CF_related_papers/ StandardsforParadose.pdf.

[3] Bien, Amos, *A Simple User's Guide To Certification For Sustainable Tourism And Ecotourism, 3rd Edition,* (Center for Ecotourism and Sustainable Development) available at ecotourism.org, pag. 10

[4] Bien, Amos, *A Simple User's Guide To Certification For Sustainable Tourism And Ecotourism, 3rd Edition,* (Center for Ecotourism and Sustainable Development) available at ecotourism.org, pag. 14

[5] GSTC History www. gstcouncil.org

[6] European Ecotourism Network, The European Ecotourism Standard – EETLS, available on http://www.ecotourism-network.eu/en-welcome www.gstcouncil.org

[7] https://www.gstcouncil.org/es/programas/recognition-of-sustainable-tourism-standards/program-gstc-approved.html and www.ecotourism-network.eu/en-welcome www.gstcouncil.org

INFORMAŢIONL SYSTEM PERFORMANCE - THE ROAD TO PERFORMANCE MANAGEMENT

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Abstract

This paper intends to bring to the fore the idea that, in modern society, information systems in general and those based on computer technology, in particular, require accepting the idea that the production of information is an art by itself. A complex of specific economic activities existence of a business can not be conducted without taking into account the cost and value of information. In a commercial enterprise, one of the fundamental roles of management is controlling or monitoring how decisions are met. A manager has constant need of information on deviations from the objectives. An important contribution here have information systems to facilitate decisions..

Keywords: informaţienale systems, decision-making system, control system.

Classification JEL: M1, M2

1. INTRODUCTION

A system to facilitate decision is a computerized system that provides the user with data models for use in solving problems it must solve.

Systems facilitate decision may be made today, easily, even on a microcomputer. They are based on evolutionary models that seem to have the greatest chance of success. In this regard, first create a hybrid system, and as time passes and the user interacts with the system, the scope of information and data grows and evolves autoadaptându the system. It should be stressed that these systems are designed to provide support in the decision not to decide. In every system there are scheduled several alternatives designed to ensure solving problems very diverse. For each alternative there is a certain amount of risk in implementation, which is impossible to assess costs.

However, to facilitate the decision systems are a powerful tool for management. A manager who is aware of the potential of such a system and has knowledge of information systems has a real advantage over the competition.

There is a tendency to shape the directions of information systems related to monitoring systems based on facilitating decisions.

A first direction is related to strengthening control systems, which on the one hand there are quartered in the area of cost control, and the other part in the improvement and development of new information systems.

Computer information systems enables commercial enterprises to achieve a large number of transactions, while ensuring permanent control and reduction of errors.

A second direction is given by the implications of information systems even outside of commercial enterprises. Lack of experts will guide companies towards the purchase of

applicative packages. As a result, businesses in general and small ones in particular will be forced to change their procedures to take advantage of existing technology. They will buy systems "turnkey" designed for a certain level of generality and will be forced to adjust their procedures according to their requirements.

The third direction refers to the contribution of information systems to increase economic efficiency. It derives from the fact that the information acquires a growing expansion in modern organizational structures.

The use of information and processing technology is now an integral part of company strategy and quality of implementation of information systems, provide any commercial enterprise in a competitive economy.
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2. IMPROVING MANAGEMENT INFORMATION SYSTEMS

Edge Company's management information system is an issue that involves the entire senior staff of the unit. In the process of improving the information system returns decisive role manager, steering committee, the board of directors. It should be borne in mind that the information system will not function normally as long as the unit staff will not be used to formalize concepts, to quantify the objectives which it sets, to translate into precise shapes options and instructions. For the manager, the rest of senior management should know the techniques of socio-economic information. They have a duty to be able to assess the information system of fair value and satisfy itself that it is essential for their participation in developing scientifically sound decisions, the Company's management. At the same time, it is necessary to know the causes that prevent the transmission of information on the current situation and what to do because the information received to give an overview of the Company's economy.

Concerned about improving the information system manager must organize the development process traffic safe, rapid and effective internal and external information.

The development of the information system, management considers the following aspects: a) the necessary information on the management company: b) processes for assessment and classification of information; c) processes for organizing the flow of information, depending on the need and depending on the channels used and the methods of collection, processing and transmission of information.

At present, in connection with requirements that are manifested in the organization and operation of management information system, improvement of acutely required. Implementation and expansion of participatory management requires broadening the scope of spreading and diversifying its economic information according to which an organizational level. Also need to increase the economic efficiency of the company requires a dynamic and competent management, constantly fed with information enabling the adoption of effective decisions and conduct effective financial management.

3. CONCLUSIONS

Prospects development management information system. Dynamic element, management information system grows apace. Providing directions for development is of crucial importance for the management of the company. Preparing specialized design of structures allowing efficient incorporation of new concepts and information techniques, are key aspects of management, it is necessary to know the trends of improving the management information system. In the future, successful application of new concepts and managerial resources will be linked to an information system in continuous improvement. As main directions mention: adapting information system in real flow of information; enlarging the scope of the information system by introducing an increasing number of devices and peripherals with multiple destinations; increasing readiness in operation management information system, through the application of a greater number of electronic devices; continuous increase in the memory capacity of the information system and use files larger scale; the manager can communicate directly with the system automatic means of gathering, processing and transmission of information; increasing knowledge share information in the training manager.

Existing management information system and its continuous improvement manager creates the possibility to apply the most effective methods and management techniques based on the use of statistical and managerial apparatus.

REFERENCES

1. M.E. Porter, *Strategy and the Internet,* HBR, Boston, 2001;
2. Matt Haig, *E-business Essentials,* Kogan Page Ltd , Londra, 2001;
3. Matt Haig, *Manual de e –marketing*, Editura Rentrop&Straton, Bucuresti, 2005;
4. Negrut, Constantin*, Resursele Electronice si Managementul Informational al Organizatiilor*, Editura Mirton, Timisoara, 2003.
5. Stoica M.- *Conceperea, managementul şi auditul performanţei proiectelor de investiţii-Ed.CH Bech, Bucureşti 2011*
6. Stefãnescu,D.- *Managementul proiectelor europene,* Ed. Fundaţiei România de Mâine, Bucuresti, 2005
7. Vasilescu,I.- *Managementul proiectelor*, Ed. Eficon Press, Bucuresti, 2005
8. *www.legi-internet.ro*
9. *www.amazon.com*
10. *www.answers.com*
11. *www.catling.com/publicationS.htm*
12. *www.compasscom.com*

CONCEIVING THE SUSTAINABLE DEVELOPMENT STRATEGIC OBJECTIVES OF OAŞ AREA, SATU MARE COUNTY, ON THE BASIS OF NATURAL CAPITAL ASSESSMENT

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Abstract

The sustainable development essentially depends on natural capital or environment assets and conceiving a sustainable development strategy at local level means first to evaluate it, through inventorying all types of natural resources: vegetable, animal, protected areas, forest and water resources, crops and farming resources, land and pastures and meadows.

The area called Ţara Oaşului, located in the north-eastern part of Satu Mare county has some particular features: a wealth of natural resources (such as forests, stone, mineral water, wild flora and fauna), population with a high level of income and luxurious but uninhabited houses, a high level of migration for work abroad (from the very beginning of nineties), a lack of labour force and active population, a reduced life expectancy, and specific popular traditions (costume, events) and culture.

We carried out a field reseach, by applying a questionnaire to local population, authorities and experts in order to obtain an estimation of natural resources, as volumes and ways of exploitation (for own consumption or market selling) and the main trends in local traditional employment. The research conclusions are valuable in order to conceive the sustainable development strategy of the area, taking into consideration the local capabilities to use the existing natural resources by protecting the environment, to build an appropriate social capital and to attract the required for economic growth human and financial resources.

Keywords: *sustainable development, natural capital, natural resources, agriculture, environment and development*

Classification JEL: *Q01,Q20, Q30, Q10, Q56*

1. INTRODUCTION

In order to be effective and contribute to the development at any local level the concept of sustainability has to be *operationalized* and *contextualized*. *Operationalizing* means to clarify which specific goals are associated to the model of sustainable development and *contextualizing* is referring to the tailoring of the model to the prevailing general conditions in a given community (Hartmuth and Rink, 2008, p.262). But in any

circumstances, three main goals are taken into consideration: economic, environment and social sustainability.

The principles of sustainability: securing human existence, maintaining society's productive potential and preserving society's options for development and action are extended to a set of "sustainability rules"(Daly, 1990; Pearce and Turner, 1990) or "sustainability requirements". Whatever the context, the natural capital is one of the inputs of any sustainable development strategy, alongside with others: anthropic, human and social capital.

Natural capital is an extension of the concept of capital to goods and services provided by the natural environment. It means the world's stock of natural resources, which includes geology, soils, air, water and all living organisms (World Forum on Natural Capital, Natural Capital Coalition). The Natural Capital Committee's State of Natural Capital Report (2013) defines natural capital as: the elements of nature that directly or indirectly produce value to people, including ecosystems, species, freshwater, land, minerals, the airand oceans, as well as natural processes and functions. An ecosystem is a dynamic complex of plant, animal, and microorganism communities and the nonliving environment, interacting as a functional unit, humans being an integral part of it. (Tansley, 1935; Convention on Biological Diversity, 1992; Article 2). Natural assets are providing services called "ecosystem services" which, combined with other types of capital, are producing goods, used or consumed by population. Ecosystem services are the benefits people obtain from ecosystem.

Ecosystem services can be classified into the following groups: provisioning, regulating, cultural and supporting services. Provisioning services include food and fiber (crops, meat, fish and honey), water, fuel, genetic resources, biochemical, natural medicines and pharmaceuticals. Regulating services refer to water purification or waste treatment, climate regulation, noise and air pollution reduction, flood and natural hazard reductions, erosion, disease and pest regulation, storm protection and pollination. Cultural services consist of non-material benefits obtained through cultural diversity, recreation or aesthetic, spiritual, religious values, knowledge, education values, cultural heritage, recreation and ecotourism. Supporting services include biodiversity, primary production, photosynthesis, soil formation and retention, nutrient and water cycling (Ecosystems and Human Well-being. A framework for assessment - Ecosystem services, 2005, p.56-60).

The anthropic capital of a given community includes manufactured or produced capital as a result of economic activities: industry, agriculture, transports, infrastructure, energy and spatial planning.

Human capital comprises educational capital (knowledge and skills), professional work experience, health capital and some forms of social capital (Neagu, 2010, p.121). Social capital of a community means trust and behavioral norms, social interactions and cohesion, local governance and institutions (see Voicu, 2008).

In the model of sustainable development that we consider in the purpose of this paper, these capital inputs are converted into results to obtain well-being in economic, environmental and social sense (Figure 1).

| Natural capital
Anthropic capital
Human capital
Social capital | → | **Sustainability goals**
-economic,
-environmental and
-social
wellbeing |
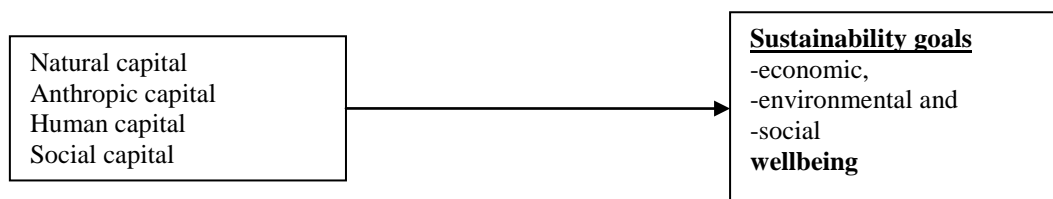
Figure 1 Model of sustainable development
Source: authors' view based on specific literature review

The economic demand for goods and services is impacted by natural, anthropic and human capital as well as by the ecosystem services and influence, at its turn, the supply of goods and services. (Figure 2).
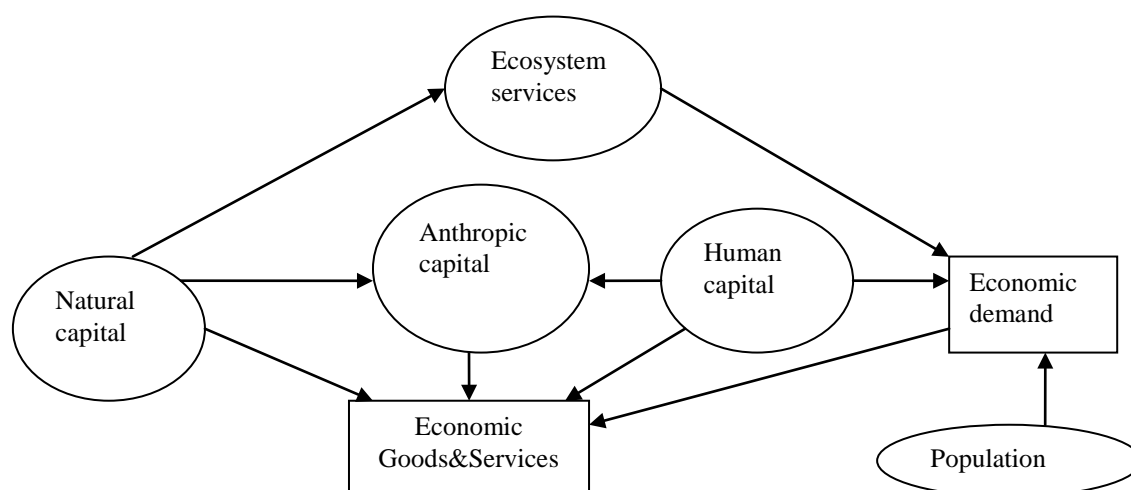
Figure 2 Types of capitals and their influence upon economic demand
Source: adaptation after Constanza and Daly, 1992, p.39

In our paper, we expose a particularization of the sustainability model (Figure1) as well as its thematic contextualization for a sustainability strategy in the case of the rural area called "Țara Oașului" from Satu Mare County into a proposal of strategic objectives, tailored to the specific situation of this area.

2. METHODOLOGY

"Țara Oașului", located in the north-eastern part of the Satu Mare county, consists of nine rural administrative units: Bixad, Călinești-Oaș, Cămârzana, Certeze, Gherța Mică, Orașu Nou, Negrești-Oaș, Racșa, Târșolț, Turț și Vama and the town of Negrești-Oaș.

We carried out a field research in order to have an estimation of natural and agricultural resources in the administration units located in the target area, their growth, processing and diversification posibilities.

An exploratory study was developed based on a questionnaire of 125 items grouped in 5 sections: fruits and vegetables (vine, orchard, fruits trees, strawberries, crops, vegetables), animals (fish, spontaneous fauna, domestic animals), pastures, others and local

occupations and labour force shortage. The questionnaire was applied to 381 individuals, 70% of them were local inhabitants, 15% representatives of local authorities and 15% agricultural experts from the ten administrative units. In the sample, 50% were individuals with higher, 35% with secondary and 15 with primary education.

The field research was complemented by the examination of local authorities public documents, regarding the local agriculture, employment, business and social environment. In addition, we explored the ecological issues related to the target area (Natura 2000 sites, pollution, soil degradation).

We performed the following steps in order to conceive the general objectives of the sustainable strategy of Țara Oașului:

Step	Results
1.Assessment of natural capital and other capital inputs (anthropic, human and social) through field and desk research	SWOT conclusions
2. Linking the identified problems with the sustainability requirements	sustainability problems-requirements
3. Setting up the strategic objectives according to SWOT conclusions and sustainability requirements	objectives on the three dimensions: economic, environment and social

3. MAIN FINDINGS

All all information gathered from the field and desk research are synthezised in a SWOT matrix (Table 1).

Table 1

SWOT analysis of Țara Oașului

Strenghts	Weaknessess
-wealth of natural resources (water, wild fruits and flora); -agriculture potential (strawberries, livestock, -touristical potential (fishing, hunting, mineral and therapeutical water, traditions); -traditional products ("magiun", "țuică"); -cultural traditions (music, dance, costumes, events, ceramics); -high income of families (luxurious houses); -existence of Țara Oașului Local Action Group (LAG).	-low capacity to capitalize the natural and agricultural potential; -low level of active labour resources and employed people due to the massive migration abroad; -low level of association (lack of trust in partnership); -low interest for environment issues; -low level of local business; -low absorbtion capacity of European funds; -declining population, reduced life expectancy; -unsatisfactory economic development.
Opportunities	**Threats**
-funding sources available for rural development projects.	-growing development disparities between areas and regions of Romania; -no incentive for migrants to come home; -difficulties in accessing funding sources.

In a second step, we organised the detalied identified problems according to the three dimensions of sustainability:

Identified problems	Sustainability Requirements
	Economic sustainability
-low sustainability of farms and low level of production; -low efficiency and effectiveness of natural (therapeutical and mineral water, fishing, tourism, sand resources, non-ferrous deposits) and agricultural resources (fruits,	-effective and efficient use of natural agricultural resources -improvement and diversification of labour force qualification (i.e. ecological

vegetables, crops, livestock); -a high level of migration (over 90% of labour resources); at home are remained only aged people and children; -low level of education and qualification of labour force; -lack of processing units; -low level of funds accessing for local investments.	agriculture) -stimulation of agricultural production; -creating of processing units of natural and agricultural resources; -increasing of accesing the available funds for local investments.
-degraded, unproductive land; - poor management of protected areas; -poor management of fishing, hunting and forestry resources; -low level of ecological agriculture; -lack of environmental knowledge;	**Environment sustainability** -land use according to ecological rules; -improved management of protected areas and fishing, hunting and forestry resources; -education for environment
-low level of associative life and lack of trust in partnerships; -low life expectancy; -low involvment of citizens in community decisions; -concern for life quality (luxurious houses), above the basic needs satisfaction, as an expression of self-actualization and of ancestral frustration -increasing role of friends and social interaction outside the family; -attachment to the western values (work, discipline) only as migrants; -reduced concern for education and its duration	**Social sustainability** -to stimulate the associative behaviour; -to stimulate the citizens' participation at solving the local community problems -to stimulate a behaviour targeted to the well-being of the local community

In the third step, we considered appropriate the following strategic objectives for a sustainable development of Ţara Oaşului:

-General objective 1-Strenghtening the basis of economic sustainability;

1.1. Attraction of investment to capitalize the natural resources;

1.2. Capitalization of land and introduction into the economic circulation;

1.3.Stimulation of rural business, agricultural and non-agricultural (eco-tourism, traditional crafts and culture);

1.4. Stimulation of processing natural and agricultural resources (chains of supply, production/processing and selling);

1.5. Diversification of labour force qualifications;

1.6. Accessing the available funds for local development (Regional Operational Programme, National Programme for Rural Development, Local Action Grup).

-General objective 2 -Developing the social capital in the area:

2.1.Development of local social cohesion around the community identity and cultural traditions;

2.2. Introducing mechanisms of citizens' democratic involvement in local decisions;

2.2. Development of social economy and stimulation of social entrepreneurship;

2.3. Support for cooperation and association between farmers;

2.4. Increasing role of LAG Ţara Oaşului.

-General objective 3 -Environmental sustainability:

2.1.Severe monitoring of protected areas (e.g.Natura 2000);

2.2. Severe monitoring of forestry resources (wood) and solving the problems related to the forest fund;

2.3. Creating new private hunting funds-better managed;

2.4. Creating private fishing units;

2.5. Educational activities for environment (young and adult people).

4. CONCLUSIONS

The proposed strategic objectives are designed in a frame of an endogenous development model, based on the community resources and the local capacity to control, to internalize the external information and to take beneficial decision for the community development.

We envisage for Țara Oașului a development model based on building the social capacity of economic, social actors and local authorities, by the means of the following capacities: sound management of local resources (labour force, land, fishery and forestry and agriculture); valorization of existing local resources: land, touristical resources, local identity, culture and traditions;control of transformation process at local level and control of social innovation.

In order to design the sustainable development strategy of Țara Oașului further and detailed discussions with local authorities and a large public consultation with all local stakeholders are needed.

REFERENCES

1.Constanza, R. and Daly, H. E., Natural Capital and Sustainable Development, *Conservation Biology,*Vol.6 No.1, 1992, p.37-46

2.Daly H.,Towards some operational principles of sustainable development, *Ecological Economics* 2(1), 1990, p.1–6

3.Hartmuth, G. Huber, K. and Rink, D., Operationalization and Contextualization of Sustainability at the local level, *Sustainable Development* 16, 2008, p.271-270

4.Neagu, O., *Capitalul uman și dezvoltarea economică*, Editura Risoprint Cluj Napoca, 2010

5.Pearce D.W., Turner R.K., *Economics of Natural Resources and the Environment*, Harvester Wheatsheaf: New York, 1990

6.Tansley, A.G. The Use and Abuse of Vegetational Concepts and Terms, *Ecology* Vol 16, No.3, 1935, p. 284-307

7.United Nations Conference on Environment and Development, The Rio "Earth Summit"- Convention on Biological Diversity, 1992 Available online at: https://www.cbd.int/convention/ Accessed 7 April 2017

8.Voicu, B. Capitalul social ca premisă a dezvoltării durabile, *Calitatea Vieții*, XIX, 1-2, 2008, p.85-105

9.****What is natural capital?,* World Forum on Natural Capital Available online at: .naturalcapitalforum.com Accessed 4 April 2017

10.****What is natural capital?,* Natural Capital Coalition   Available online at: www.natural capitalcoalition.org   Accessed 3 April 2017

11.****The state of natural capital: towards a framework for measurement and valuation*, Natural   Capital   Committee   2013   Available   online   at: http://nebula.wsimg.com/66000b802a5cab1425b1e05d9a716835?AccessKeyId=68F83A8 E994328D64D3D&disposition=0&alloworigin=1   Accessed 4 April 2017

12.****Ecosystems and Human Well-being. A framework for assessment - Ecosystem services, 2005*   Available online at:
http://www.millenniumassessment.org/documents/document.300.aspx.pdf
Accessed 3 April 2017

EVALUATION OF THE ENVIRONMENTAL POLICY INTEGRATION WITHIN THE DEVELOPMENT STRATEGY OF AN ORGANIZATION

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Abstract

Defined in a three-dimensional approach, sustainable development of an organization has as key unifying elements creating, testing and preserving the potential to adjustment and its validation opportunities. The aim of the study is to identify the directions of action for improving the harmonization process of the economic, social and environmental dimensions, in line with the organisation's objectives of development. The need of this research has issued from the fact that, while revealing the economic and social aspects in the development strategy of an organization represents, almost, a truism, the integration of the environmental policy emerged as a new form of decision makers' responsibility. For assessing the environmental policy integration, an analytical approach is used, in a quantitative methodological context, which allows tracing the normal and real curves of the graphic reflection of the environmental policy in the development strategy of an organization. Considering this and the main parts of the development strategy, the strategy components are ranked, so as to allow establishing the percentage deviations between the two curves. The relevance of the research and the importance of the results consist not only in overall evaluation by summing the deviations, but also to over or under assess the financial efforts of integrating the environmental policy within appropriate domains of the development strategy of an organization.

Keywords: sustainability, development, integration, prioritization, deviation

Classification JEL: Q560

1. INTRODUCTION

The transition from the sectorial approach to the integrative one, regardless the hierarchical level of the system under analysis, has imposed a new paradigm within the business administration, namely the ecosystemic and adaptive management (Angheluta, 2004).

This option is an important premise for promoting the sustainable development of the organization (Angheluta, 2004, Angheluta and others, 1999, Negrei and Calu, 2016), with direct and indirect effects upon its performance.

In this context, we underline the need of reducing the gap between social and private costs of the organization, which is an objective to be achieved to the extent that the environmental policy is integrated into the development policy (Negrei and Calu, 2016).

This piece of research develops an algorithm which allows identifying the domains of actions to ensure the coevolution of the organization, as a socioeconomic system, and of the natural environment, as system (within the socioecological system) (Angheluta, 2004, Negrei, 1999).

2. METHODS AND APPROACH

The starting point to design the algorithm for overall diagnostic of the organization from the point of view of its commitment to ecological restrictions is the main components of the development strategy in a microeconomic approach.

Each component is based on a number of elements meant to reflect the organization's preoccupation to increase its ecological performance (Bourg and others, 2006, de Backer, 1992, Chevallier, 2000).

In pursuing this, the decision makers and operational staff have been interviewed for obtaining a quantitative assessment (on a scale from 1 to 5) of the organization's commitment to ecological responsibilities.

Both the main components of the development strategy and its elements have been ranked using the DELPHI method, the technique "binary comparison".

The importance and the levels of reflecting the environmental policy were arranged in a rectangular axis system, such that three areas of importance have been defined on the abscissa and three areas of reflecting the environmental policy have been defined on the ordinate.

3. MAIN RESULTS

Basically, the higher the importance of a component or an element, the level of reflecting the environmental policy should be higher. The application of this principle allows drawing the normal curve of reflecting the environmental policy in the development strategy. Based on the empirical results of the quantitative evaluation, correlated with the coefficients of importance for each component/element, the real curve of reflecting the environmental policy in the development strategy has been traced.

The graph obtained highlights the real curve's deviations from the normal curve, respectivelly the situations when the environment is overestimated and when the environment is underestimated.

The simply algebrical addition of the deviations, expressed as percentages, offers a degree of integrating the environmental policy within the development strategy of an organization.

4. CONCLUSIONS

We consider that the main contributions of this study are:

-   mixing several methods and techniques in an algorithm which allows the diagnosis of the ecological performance commitment of the organization;
-   tracing the normal and real curve of reflecting the environmental policy within the strategy of development;
-   assessing the size of reflecting the environmental policy within the strategy of development.

REFERENCES

Angheluta, V. *Managementul dezvoltarii*. Ed.Ars Docendi: Bucharest. 2004.

Angheluta, V., Negrei, C., Lisievici, P. *Dezvoltare durabila. Teorie si practica*, vol.II, *Mecanisme si instrumente*. Ed.Universitatii din Bucuresti: Bucharest. 1999.

deBacker, P. *Le management vert.* Dunod: Paris. 1992.

Bourg, D., Grandjean, A., Libaert, T. *Environnement et entreprises*. Ed.Pearson Education France: Paris. 2006.

Chevalier, P. *Gestion de l'environment en milieux urbain et industriel.* Ed.Tele-universite: Saint Foix (Quebec). 2000.

Negrei, C., Calu, A. *Politica de mediu si dezvoltarea sistemelor socioeconomice*, Ed.ASE: Bucharest. 2016.

Negrei, C. *Instrumente si metode in managementul mediului.* Ed.Economica: Bucharest. 1999.

USE OF CLUSTER ANALYSIS IN STUDY OF EUROPEAN CEREALS` MARKET

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Abstract

Starting from the fact the cereals are the main raw material for the food industry, the present work aims to analyse and identify, with the help of cluster analysis, the best performing countries, members of the European Union (EU), which have common characteristics having in view the degree of economic development, measured by means of the indicator of Gross Domestic Product (GDP), the production of grain and the yield per hectare. At the same time, using the method based on hierarchy of ranks, depending on the size of each level features and the relative distance method in relation to maximum performance, will determine developments position which occupies each country within the clusters represented in the EU-28. The data is used for analysis related to late 2000, 2008, 2014 and 2015.

Keywords: cereals, cluster analysis, GDP, the production of grain, the yield per hectare

Classification JEL: O13, Q13

1. INTRODUCTION

Farming can be a source of growth for the national economy, contributing on average with 3% to GDP growth in the countries of the European Union, a provider of investment opportunities for the private sector, a source of livelihood for people in rural areas. Improvement of productivity, profitability and sustainability in agriculture may be the main way out from poverty for agriculture-based countries. (The World Bank, 2008).

The production of grain (including rice) harvested from the member countries of the EU-28 was about 334,2 million tons in the year 2014 and about 317,3 million tons in the year 2015, representing about 13% of the cereal production worldwide, making it one of the largest manufacturers of grain. Since 2007, cereal production has fluctuated considerably. Thus, in the year 2008, grain production has recorded a significant increase of 21,1% compared to 2007, and in the year 2009, unfavourable climatic conditions have led to a drop in production with 6,0% from 2008. The downward trend continued in the year 2010, and production fell yet again with 5,1% compared to 2009. Although, in the year 2011, the production of grain has increased slightly (2,6% compared to 2010), a decrease of 2,7% was recorded in the year 2012. Over the next two years, the production of cereals to the European Union grew, with 8.3% in the year 2013 and with 9,3% in the year

2014. In the year 2015 it was declined with 5,05% compared to 2014. (Eurostat, Statistics Explained, 2016).

In the EU-28, between 2007 and 2014, there was an increase in the harvested production of cereals, (+ 27,8 %), France represented more than a fifth (21,8%) of EU-28 cereals production of 2014, Germany 15,6% and Poland 9,6%, together have contributed a quarter of the total UE. (Eurostat, Statistics Explained, 2016).

In terms of quantity and area, wheat is by far the most popular cereal grown in the EU, making up nearly half the total. Of the remaining 50%, about one-third is maize and one-third barley. Other cereals grown in smaller quantities include triticale, rye, oats and spelt. (European Commission, 2016).

GDP, as an indicator for measuring economic development, has shown a substantial reduction in the years 2008, 2009, as a result of the global financial and economic crisis. There was, however, a slow recovery in the EU-28 in the year 2010, and this trend has continued between 2011-2013. In the year 2014, the GDP at current price increased by 3% over the previous year, reaching to 13,9 trillion EUR. (Eurostat, Statistics Explained, 2016).

2. CLUSTER ANALYSIS

In the analysis, it use a hierarchical clustering method (Hierarchical Cluster Analisys) method based on variance (Ward's method), generating groups by minimizing the variance within each of the groups, the error sum of squares.

$$ESP_t = \sum ESP_k \quad (1)$$

where:
ESP – the error sum of squares
k – the number of clusters
t **-** total

This method assumes that every step takes into consideration every pair that might be united in a cluster, and the pair that leads to the small variants is unified.

In the first stage, with the help of cluster analysis were performed for groups of countries that have common features, and at the end of the research will be selected from the top countries that form a cluster, and will determine the interdependence between GDP and the production of cereals that have the largest share in the total cereal.

To constitute the groups there were defined measures of similarity and disimilaritate between the 28 countries surveyed. The similarity or the difference between these is expressed using the Squared Euclidean Distance, calculated using SPSS. (Arbuckle J. L., 2010).

The method used is based on the cluster, represented by 28 countries, to be gradually amalgamated, relaxing the criterion of grouping until it comes down to a single cluster.

EU-28 member countries grouping into a smaller number of homogenous groups on the basis of the total production of cereals yield per hectare and the GDP is achieved on the basis of data from 2015 through the use of SPPS software package. Thus, in order for a group of countries has been used simple Euclidean distance, through a comprehensive links.

The highest jump was recorded in stage 26. Optimal number of clusters is calculated by the difference between the total number of objects and the stage where the coefficient of

agglomeration recorded the biggest jump. Thus, the number of clusters is 2. The same is apparent and in dendrogram.

According to dendogram, they form two clusters (groups) so that one group consists of those countries: Germany, France, United Kingdom, Italy and Spain, and the other group comprise the other member countries of the EU-28.

Starting from this group proceed to the identification of countries with the best individual performance indicators having in view the production of cereals, yield per hectare and GDP by using the method of ranks based on the ranking in relation to the size of the feature level. At the same time, the use of relative distance towards maximum performance to be achieved, having in view country ranking combined three indicators.

3. CONCLUSIONS

Cluster 1 is composed of the most powerful country economically (France, Germany, United Kingdom, Italy and Spain) of the European Union in the year 2015, they maintained a rate of 71,53% of the GDP of the EU-28. The cluster is also characterized to a 57,82% of grain produced in the year 2015.

If we analyze separately the indicators, it may find that, for the production of grain, first place was France with a registered amount in the year 2015 from 72,157.24 thousand tons, representing 22.81% of cereal production obtained at EU level. France ranks fifth with 7,27 tons per hectare, the first position was occupied by Belgium, with a yield per hectare over nine tons. Belgium is located in the cluster 2, occupying the position nine in the ranking of countries that form the European Union. In second place for the production of grain lies Germany, place what has been preserved in all the years of study. In the year 2015, the production of cereals of Germany represented 15,46% of EU-28. The yield per hectare, Germany ranked sixth place with 7,12 tons per hectare, the situation was more favorable in the year 2014 when, it was placed in 4th place, before France, with a productivity of 8,04 tons per hectare,.

Even though Poland is part of the cluster 2 on the production of grain produced in 2008, 2014 and 2015, the country occupies the third place, with a yield representing 8,85% of the European Union, in the year 2015. Poland it ranks 23rd in the rankings to yield per hectare indicator, where the value is 3,73 tons per hectare. In the year 2015, the 4th place in grain production (24,735 tons) and the yield pe hectare cultivated with cereals (7,98 tons per hectare) is occupied by United Kingdom.

Spain occupying the second position in the year 2000, with a quantity of 24.566,9 thousand tons, in the year 2015 only occupies the fifth position, with 19.535,98 thousand tons. In 2015, the yield per hectare was 3,17 tons, which placed 26th place after Romania. This country has seen an uptrend in production of cereals, standing on the sixth place in the classification of the European Union, with an output of 18.672,48 tons.

Seventh place in the year 2015 to cereal production goes to Italy with 17.553,1 thousand tons. Italy ranks fourteenth in yield per hectare with 5,37 tons.

In the year 2015, Hungary ranks eighth place in grain production obtained it, with 14.036,18 thousand tons, and ranked fifteenth in yield per hectare, with 5,19 tons. Cereal production ranking continues with Denmark, it retains the ninth place in the study. In the year 2015, the yield per hectare was 6,90 tons of cereal, placed Denmark ranked seventh

place, in front of Slovenia, it has obtained 6,34 tons per hectare. With a quantity of 635,1 thousand tons of grain produced, in the year 2015, Slovenia ranked 25 place, of the production of grain.

Other aspects were seen from the analysis are related to the production of grain obtained from Ireland, which with a yield per hectare of 9,03 tons in the year 2015, it ranks the second place and the Netherlands with a yield per hectare of 8,72 tons ranks the third place. In the year 2015, at the production of cereals, Ireland ranks 21st place, while the Netherlands ranks 22nd place.

The lower production of grain, 72,19 thousand tons, is obtained from Cyprus. Neither productivity situation is not better, the yield per hectare in the years that have been analyzed was 2,64 tons per hectare .

Analyzing the first cluster, it was found that over 70% of cereal production is destined for internal consumption in the country, and the difference is exported. The main cereal exported by these countries is wheat and meslin and representing 56,06% of exporting this type of cereal by the European Union.

REFERENCES

1. Arbuckle J. L., (2010), IBM SPSS Amos 19 User's Guide, Amos Development Corporation, IBM Corporation, USA, Chicago.

2. Armeanu, Ș., D., Vintilă, G., Moscalu, M., Filipescu, M., O., Lazăr, P., (2012), Utilizarea tehnicilor de analiză cantitativă a datelor pentru estimarea riscului de faliment al corporaţiilor, Economie teoretică și aplicată, Volumul XIX, No. 1(566), 86-102, http://store.ectap.ro/articole/68_1_ro.pdf.

3. Babucea, A.G., Dănăcică, E.D., (2009), Using Cluster Analysis for studying the proximity of registered unemployment at the level of counties in Romania at the beginning of the economic crisis, http://www.utgjiu.ro/revista/ec/pdf/2009-01/26_BABUCEA_ ANA_GAB RIELA.pdf, 347-356.

4. Coman, G., (2007), Statistică. Teorie și aplicații, Iași, PIM, https://books.google.ro/ books?Id=sokmBAAAQBAJ&pg=PA306&lpg=PA306&dq=metoda+rangurilor&so urce=bl&ots=d9gqy0R3Xf&sig=41YQWuEVxDeK6_HRG9VVxheLo9U&hl=ro&sa=X& ved=0ahUKEwjK5uzz2MrMAhWKXhQKHRDqD8YQ6AEINDAE#v=onepage&q=meto da%20rangurilor&f=false,309.

5. Eurostat, Statistics Explained, (2016), Main annual crop statistics, http://ec.europa.eu/eurostat/ statistics-explained/index.php/Main_annual_crop_ statistics.

6. Eurostat, Statistics Explained, (2016), Agricultural production – crops, http://ec.europa.eu/ eurostat/statistics-explained/index.php/Agricultural_production_-_crops.

7. European Commission, (2016), Cereals, oilseeds and protein crops, rice, Agriculture and rural development, http://ec.europa.eu/agriculture/cereals/index_en.htm.

8. Eurostat, Statistics Explained, (2016), National accounts and GDP, http://ec. europa.eu/eurostat/statistics-explained/index.php/National_accounts_and_ GDP.

9. European Commission, (2016), Statistical Factsheet, European Union, http://ec.europa.eu/ agriculture/ statistics/factsheets/pdf/eu_en.pdf, 1-20.

10.   European Commission, (2013), Overview of CAP Reform 2014-2020, Agricultural Policy Perspectives Brief, (5), http://ec.europa.eu/agriculture/policy-perspectives/ policy-briefs/05_en.pdf, 1-10.

11.   The World Bank (2008), World development report, Agriculture for Development, Washington DC, http://siteresources.worldbank.org/INTWDR2008/Resources/WDR _00_ book.pdf.

PERFORMANCE IN INTERNAL CONTROL AND RISK MANAGEMENT

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Abstract
The purpose of this article is to highlight the importance of internal control and risk management. In practice, economic entities meet a variety of risks that have the origins from the internal environment or the external one. Although there are different views on addressing the concept of risk - threats or opportunities, event or action, accordingly uncertain, proposed by specialists in risk management in this article we try to present these issues and identify techniques to counter risks occurrence. In this article we present also means managing risk and why needs to be implemented at institutional level a risk management..

Keywords: risk, management, performance, control.

Classification JEL: M40,M21

1. INTRODUCTION

Risk management or internal control are concepts which have recently been subject to an appreciation and recognition of the increasingly high, and even if notions highly publicized practice has shown that not all who are involved in management activities know the true meaning of that.

Complex legislative and economic environment faced by managers in the management entities determine the indispensability of an internal control system. Also in the management of economic entities, risk management is an important process of identifying, analyzing and responding to potential risks of the organization. In Romania, lately, companies interested in the area of risk management as those in the banking, IT, multinational companies and public institutions.

Final paper aims to identify the types and methods of application of risk management within companies, nationally. This scientific approach will materialize in presenting literature and legislation in the field of risk / risk management through new conceptual approaches, in terms of structural elements and patterns of development and

implementation of risk management by identifying, assessing risks, analyzing potential risks and impacts of their production on the company's activity.

2. PAPER BODY

We met many ways of defining risks in literature and in national legislation, depending on the context in which they are addressed. In the following, we present a conceptual delimitation of the concept of "risk" and that of "risk management".

The first defining is met in the mid-17th century, as "risque" in French and "rischo" (derived from "Risch") in Italian. The dictionaries define the risk, also in different ways. Le petit Larousse gives the following connotations of the term "danger, inconvenience more or less likely, to which we are exposed" or "exposure to danger, loss or failure". Webster`s Dictionary presents the following definition: "the chance of suffering harm (evil) or loss", "danger, exposure to something dangerous" but also "try your chances." The Explanatory Dictionary of the Romanian language defines risk "hazard possibly more or less predictable; danger".

National legislation defines risk as "a problem (situation, event, etc.) not yet appeared, but may occur in the future, in which case the results obtained previously fixed is threatened or potentiated" (Order 400/2015), "events that may affect the achievement of targets is risks that must be identified" (Order no. 946/2005), "ability to produce an event that could have an impact on achieving the objectives" (Decision no. 88/2007) ," any event, action, event or behavior detrimental impact on the ability of public entities to achieve these objectives" (Order no. 38/2003).

The literature has also numerous approaches "an undesirable event, namely inaccuracy ..." (Jinga, 2009), "the threat that an event or action affecting an organization's ability to achieve the objectives set" (Morariu and others, 2008), "an event or as a therefore a specific stance: the consequences are uncertain ... " (Aven and Renn, 2010), " an element of uncertainty which may occur in the life entities, determining the distribution of possible outcomes, with subjective and objective values, likely damaging and irreversible" (Dănescu, 2007), "an uncertain event or condition which, if it occurs, has a positive or negative effect on the objective set ... risk includes both threats and opportunities objectives to improve these objectives." (Project Management Institute, 2000).

Assembly processes on the identification risk assessment, identification of the persons responsible, anticipation of risks, their periodic review and monitoring of its progress is the risk management. All these actions are carried out through internal control, with which the organization provides risk management.

Risk management includes all processes on the identification, risk assessment, identification of the persons responsible, anticipating risks, their periodic review and monitoring results. Managing these risks is provided in an economic entity through internal control.

In practice, economic entities meet a variety of risks that originate from the internal environment or the external one, and because this issue can not be considered fully.

National Institute of Internal Control in Romania establishes five "phases of risk management", namely: (1) Risk identification; (2) Risk evaluation; (3) Risk control; (4)Risk analysis; (5)Risk reporting.

Risk identification involves analysis of the documents available in the company, its historical data, to interview employees, studying the experience of other organizations. Risk evaluation means comparing the risks identified with risk criteria established to achieve a classification according to their importance. Risk control involves identifying production techniques to counter risk assessment and analysis risk of the event is undesirable establish the likelihood that risk to occur. Risk reporting is done by developing a risk management plan, risk register (single centralized document within the organization) and performance reports. For an proper risk control or to prevent it, reduce or eliminate the risks of general or specific ones, it must exist an adequate internal control activities.

3. CONCLUSIONS

Although specialists in risk management still have different views on addressing the concept of risk - threats or opportunities, event or action, accordingly uncertain, we can say that risk is an event with a certain probability of occurrence in the future that can positively or negatively affect activity performed, objectives or part of the business.

The process of implementing an internal control system is complex, the implementation requires a certain duration in time, and its implementation must be based on a set schedule. Managing an entity implies a rational and coherent risk management system.

REFERENCES

1. Aven T., Renn O., *Risk Management and Governance: Concepts, Guidelines and Applications*, New York, Ed Springer, 2010, p.3

2. Dănescu T., *Financial audit - convergeces Between theory and practice*, Publishing House Irecson, 2007, p 68-69

3. Decision no. 88/2007 for the approval of the internal audit, Annex 1

4. Jinga G., *The Cost Management Accounting Systems*, PhD Thesis, ASE Bucharest, Romania, 2009, p.58

5. Morariu A., Suciu Gh., F. Stoian, *Internal Audit and Corporate Governance*, University Publishing House, Bucharest, 2008

6. Order 400/2015 approving the Internal Control Code / managerial public entities, Annex 1 III. Glossary

7. Order no. 946 of 2005 approving the Internal Control Code, including standards management / control of public entities and to develop management control systems, Appendix 1, code Internal Control

8. Order no. 38/2003 approving general rules on the exercise of the internal audit, pct.8.6.1

9. Project Management Institute, *Guide to the Project Management Body of Knowledge*, 2000

CONTROVERSIAL EFFECTS OF REGIONAL TRADE AGREEMENTS ON ENVIRONMENTAL ISSUES

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Abstract

There is increasing interest for using regional trade agreements as instruments for environmental protection given the strongest of their application mechanisms. It can be seen that they have not only become more numerous, they have also become larger, covering many fields as contracting parties exceeding the scope of tariff reduction and negotiating issues related to investment, services, intellectual property rights and environment. Environmental provisions of regional trade agreements can both facilitate trade and support sustainable environmental, social, and economic development. European Union and United States promote high standard RTA to set a precedent and to model the negotiations in their interest. The main goal is to avoid unfair competition and environmental dumping from less developed markets where it could benefit from lower levels of environmental and labor standards to keep production costs low. This study aims to emphasize both positive and negative impacts of trade on environmental issues and sustainable development. The starting point is the challenge that trade may present for environment protection: scale effects, composition effects, competitiveness effects and technique effects.

Due to their increasing role in shaping global trade rules, the paper tries to demonstrate if RTAs can potentially be used as leverage for promoting environmental issues in the global economy.

Keywords: *environmental provisions, trade and environment, regional trade agreement*

Classification JEL: *F18, F55, O44*

The World Trade Organization (WTO) has played an important role in determining the rules of international trade, but the recent emergence of regional and bilateral trade agreements has complicated the application of these rules in member states. The main objective of the regional trade agreements (RTA) is to reduce tariffs in member states, but these agreements have stipulated provisions related to trade liberalization. Recent RTAs have included new issues that are not included in the WTO negotiations, so this fact led to the implementation of trade liberalization through regional agreements, not by multilateral system (Yanai, 2014).

Although the Marrakesh Agreement settled the WTO targets on environment and sustainable development (Johnson, 2015), its main purpose remains trade liberalization.

Therefore, environmental issues can be regarded as exceptions to trade rules and, in some cases, it is permissible to restrict trade in order to avoid negative effects on the environment.

There is a long debate concerning environmental provisions and OECD is one of the organizations that have focused on this issue (OECD, 2000; OECD, 2007; Gallagher & Serret, 2011). The relationship between international trade and the environment was analyzed by critics who have two opinions: some of them have shown that international trade put pressure on environmental objectives and the others consider that international trade contributes to address environmental issues (Managi, Hibiki & Tsurumi, 2009).

This study aims to focus on the environmental provisions from RTA, especially on those from EU and United States by emphasizing both positive and negative impacts of trade on environmental issues and sustainable development. In this regard, we detailed the design of environmental provisions along multiple dimensions: environmental goals in the preamble, multilateral environmental agreements, cooperation in environmental matters, environmental exceptions, environmental law, and public participation.

It is difficult to know for sure whether the inclusion of environmental provisions in RTA and WTO rules has positive effects on the environment. According to specialists, the main goal of a green RTA is to ensure rigorous standards regarding the environment to prevent adverse effects of competition for investment and trade (Berger et all, 2017).

RTAs could be a vehicle to improve environmental protections and also represent an excellent political opportunity for environmental interests within regions. Comparative with WTO, at regional level it is much easier to identify specific issues that should be addressed and agree on specific solutions.

REFERENCES

Berger, A., Brandi, C., Bruhn, D. & Chi, M. (2017). Towards "Greening" Trade? Tracking Environmental Provisions in the Preferential Trade Agreements of Emerging Markets. *Discussion Paper 2/2017*, German Development Institute, Bonn

Gallagher, P. and Serret, Y. (2011). Implementing Regional Trade Agreements with Environmental Provisions: A Framework for Evaluation. *OECD Trade and Environment Working Papers*, 2011/06, OECD Publishing, Paris

Johnson, T. (2015). Information revelation and structural supremacy: The World Trade Organization's incorporation of environmental policy. *The Review of International Organizations*, *10*(2), 1-23

Managi, S., Hibiki, A. & Tsurumi, T. (2009). Does trade openness improve environmental quality? *Journal of Environmental Economics and Management*, 58(3), 346-363

OECD. (2000). *Assessing the Environmental Effects of Trade Liberalisation Agreements: Methodologies*. OECD Publishing, Paris

OECD. (2007). *Environment and Regional Trade Agreements*. OECD Publishing, Paris

Yanai, A. (2014). Environmental Provisions in Japanese Regional Trade Agreements with Developing Countries. *IDE Discussion Paper No. 467*, Institute of Developing Economies, Chiba

AN ANALYSIS OF THE MACROECONOMIC INDICATORS THAT INFLUENCE THE EDUCATIONAL SYSTEM IN THE EUROPEAN UNION IN ACCORDANCE WITH THE " EUROPE 2020 STRATEGY"

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Abstract
At European level of education and training plays a crucial role in the development strategies. "Strategy Europe 2020" is a a key tool for the modernization of the education and training not only to the general level the European Parliament but this document pays a special attention to each Member State of the European Union. In the conditions under which the most Europeans significantly spend much time in the process of education, reflect through no fault of their own to join in higher education, as well as the participation in the initiatives of learning throughout the life cycle for the purpose of retraining or a change of his political career. The manifestation of this phenomenon is due to the diversity of opportunities that it provides its citizens to study and work in order to improve the economic performance of the European Union.

Keywords: *select 4 – 7 key terms (words or phrases) that reveal the essence of the paper. List these terms in the decreasing order of their significance.*

Classification JEL: *A23,C52,I28*

1. INTRODUCTION

The role of higher education in the knowledge-based society is recognized both at the level of the European Union and to the Member States. From this level of education expects an important contribution in the attainment of the objectives listed in the Lisbon agenda, in respect of growth, prosperity and social cohesion. These requirements were included in the work program of the European Union to be known as the "Education and training for 2010", which underlined clearly, the importance of the modernisation of higher

education institutions and of the reforms encouraged by the Bologna process, all with the aim of creating a European area for higher education".

The objective of the European Parliament for higher education, that was supposed to reach a higher level of quality in order to pass the test of comparing its internationally. Parallel, higher education in the EU had to enhance its leadership and responsibility, increase their financing and to diversify the sources of financing.

The entire policy of coordination of MS through their actions, respectively projects in the "Strategy Europe 2020" must take into account the following: changes of a general nature which will appear in the Society; the globalization process and intensify the commercial relations between Member States; changes in the field of labor productivity generated by the development of computer science, of communications and the technology; pressures on the natural resources and the role of climate change. All these will have to be included in the training programs of the future graduates of higher education because this is the only way he will be able to improve their competitiveness and profitability of human performance and will be able to record an economic growth intelligence, sustainable and inclusive.

2. PAPER BODY

The role of higher education in the knowledge-based society is recognized both at the level of the European Union and to the Member States. From this level of education expects an important contribution in the attainment of the objectives listed in the Lisbon agenda, in respect of growth, prosperity and social cohesion. These requirements were included in the work program of the European Union to be known as the "Education and training for 2010", which underlined clearly, the importance of the modernisation of higher education institutions and of the reforms encouraged by the Bologna process, all with the aim of creating a European area for higher education".

The objective of the European Parliament for higher education, that was supposed to reach a higher level of quality in order to pass the test of comparing its internationally. Parallel, higher education in the EU had to enhance its leadership and responsibility, increase their financing and to diversify the sources of financing.

The sources of the constitution of the incomes of higher education institutions of the state are structured, at a European level, on three lines, namely:

•   The allocations from the state budget of the Member States; they represent the main source of financing of higher education institutions by the state with a weighted, at a European level, between 50-90 percent of the total revenues;

•   Study fees paid by the students, whose value directly depends on the policy funding of higher education, promoted at national level;

•   Other sources - contracts for scientific research, the provision of services in various fields, European funds and other extrabudgetary sources; this budget line providing, in some countries of the European Union, up to 10 % of the total value of the incomes for higher education (see figure 1).

Figure 1. Sources of funding for activities like taking in the higher education institutions in the I in 2012.Percentages

Revenue sources of the state higher education institutions in Europe-%

■Allocations from the state budget   ■Tuition fees paid by students   ■Other sources
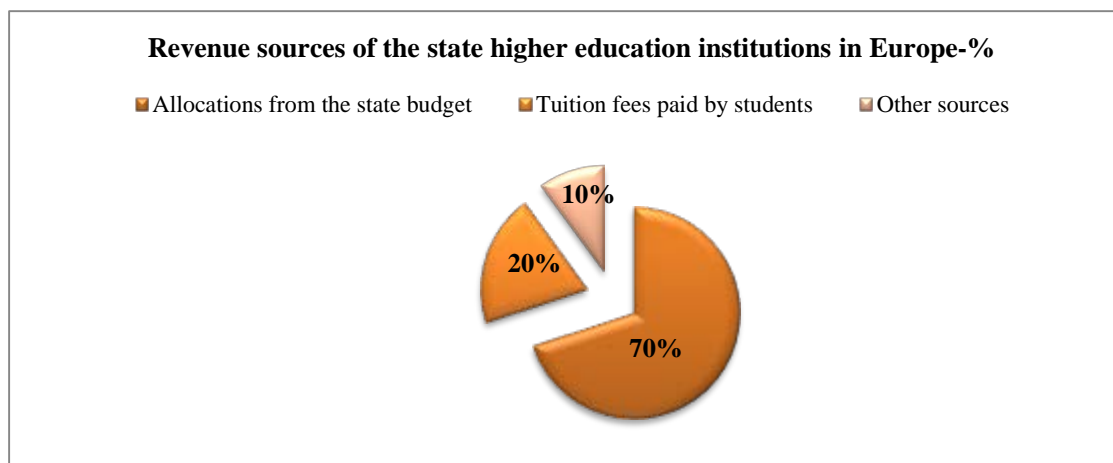
Source: The European Commission - DG education and culture. 2008. " The Government in higher education in Europe. Policies, structures, financing and academic body/ Higher Education Governance in Europe. Policies, funding structures and academic staff";
Http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/091RO.pdf

Of the actions, respectively projects in the "Strategy Europe 2020" connection elements with the future developments of the system for the university education have all seven (The Innovation; Youth in motion; the Digital Agenda for Europe; efficient resources for Europe; an industrial policy suitable for the globalization age; Agenda for the new qualification and places of work; European Platform against poverty and social exclusion). In this context, it is to be mentioned that the involvement of each project in future developments of the system for the university education is different, and by the national programs and those of the support of the EU integration of young people, including the graduates of higher education, in the labor market is and will be a constant preoccupation.

The entire policy of coordination of MS through their actions, respectively projects in the "Strategy Europe 2020" must take into account the following: changes of a general nature which will appear in the Society; the globalization process and intensify the commercial relations between Member States; changes in the field of labor productivity generated by the development of computer science, of communications and the technology; pressures on the natural resources and the role of climate change. All these will have to be included in the training programs of the future graduates of higher education because this is the only way he will be able to improve their competitiveness and profitability of human performance and will be able to record an economic growth intelligence, sustainable and inclusive.

Research Methodology
The source of the data was based on statistical data taken from Eurostat. Such data have affected the main macroeconomic indicators of measurement status and financial efforts of MS of the European Union in the field of education in the "Strategy Europe

2020". Main methods of research used in the case of the series of time have been total research for macroeconomic indicators characterizing the education. The study on the state of the educational system in the European Union, at present, was based on data and information on the EUROSTAT such as: the number of children and the students; the percentage of the population on the levels of education; graduates of university education in the total and depending on the gender; etc.

Acceptance of data from Eurostat have enabled the use of simple method (basic) characterisation of education as for example: graphics method that shows the evolution of macroeconomic indicators of the status of education at European level, the method of structural changes and simple method of the processing of these indicators determined in this case, as indicators absolute, relative and synthetic (medium) review in an independent manner.

Analysis and modeling data to characterize trends in the education system in the European Union in accordance with the "Europe 2020" took into account, in the second part of the study, correlation analysis can be established following the application of regression methods and methods of correlation parametric between specified indicators and influence factors taken using management programs and database analysis (EViews). (Serban, D., Cristache,S., Tigu,G,2012)

Regression analysis is the statistical technique that identifies the relationship between two or more quantitative variables a dependent variable, whose value is to be predicted, and an independent or explanatory variable, or variables, about which knowledge is available. The techniques are used to find the equation that represents the relationship between the variables.

Characterize the state education system in the European Union based on data volume secundare-evolution, correlation

The analysis of the evolution and the structural modifications of main macroeconomic indicators characterizing the condition of the educational system in the European Union in accordance with the "Strategy Europe 2020"

The main indicators on the state of the education system of the "Strategy Europe 2020" are in a first classification those relating to: Leaving the early school and training (by weight of the population in the age of 18-24 years) for total and by gender; school population; the percentage of the total number of university graduates (total; by gender), learning mobility of students in Europe; total number of student; etc.

- *Leaving the early school and training*

In Figure 2 we can see a descending trend in early school leaving and training which corresponds with a decrease in the annual average 0,54 percentage points. The decrease of the early leaving of school and training in the period 2008-2014 was 4%. In the same time this macroeconomic indicator which characterizes the condition of the educational system in the EU in accordance with the strategy of Europe 2020 registered a decreasing trend, with an annual average of 13,2 percentage points /year which indicates a positive evolution of system status of education in the EU.

Figure 2. Evolution of early school leaving and training (% of population aged 18-24 years) –from 2008-2015.Percentages
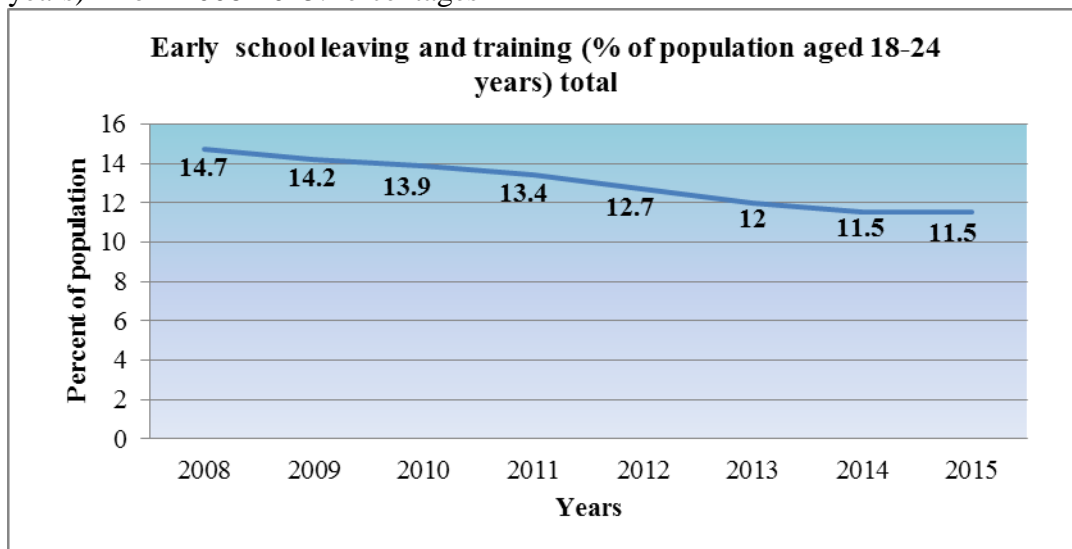
Source: Eurostat, from the section web: Europe 2020 headline indicators
The estimated data to 2015

The positive results of this indicator (the abandonment of school) at the level of EU, are complex and multiple as for example: the favorable economic situation, reduction of external migration, the conditions of the positive family, etc.

- *Graduates of academic education- represents the second macroeconomic indicator of the characterisation of the status of the educational system in the European Union (see figure 3).*

The graduates from the university education - total were recorded in this period (2008-2014) an ascending evolution with an annual average of about 35 percent and an average annual increase of 3,08 %. Salary the annual average of the number of graduates of higher education institutions was 0,93 percentage points. the average annual growth rate of the graduates of higher education institutions of gender Female was 3.62% ,better than the gender Male with 0.28 percentage points (see Figure 3).

In conclusion, for this were taken into account the main indicators on the "Early school leaving and training", because in the light of the evolution of the numeric school population, we can reach or not the parameters proposed in "Strategy Europe 2020" for the graduates of higher educational establishments.

Figure 3. Evolution of higher education graduates in total and by gender from 2008-2015. Percentages
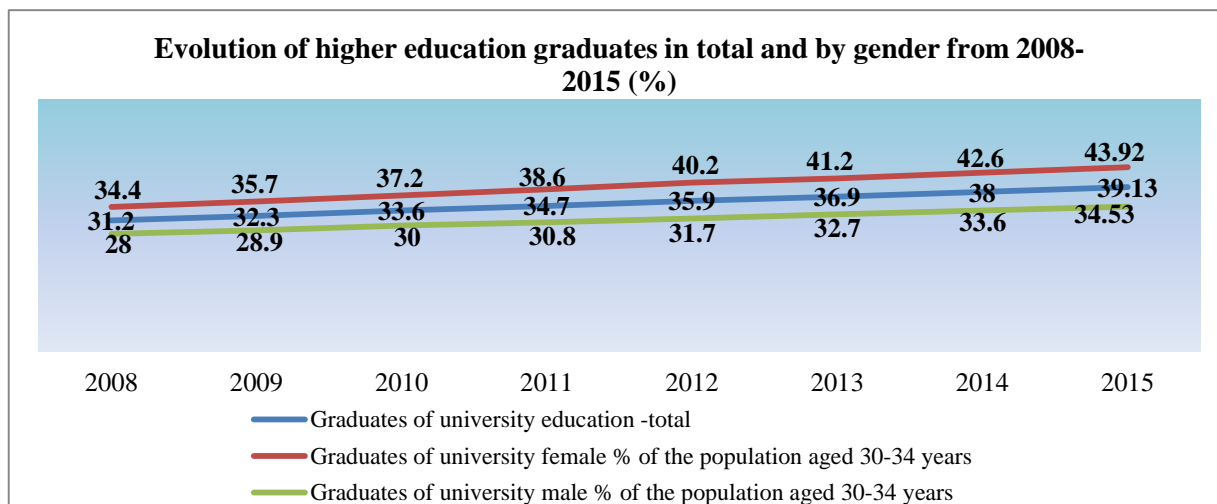
Source: Eurostat, from the section web: Europe 2020 headline indicators
The estimated data to 2015

- *The student population*

The student population in 2012 was 93,2 million children and students. Over 50 % of the number of children and students (52.4%, respectively 48.835,9 thousands of children and students were in Italy (9407,6 thousand children and students, respectively 10.1% of the total), France (12.418,6 thousands, i.e. 13,3 %), Great Britain 13.093,6 thousands, respectively 14,0%) and in Germany (13.916,1 thousand children and students, i.e. 14,9 %). Romania with 3.315,4 thousands of children and students represented 3,6 % of the total number, coming close to the Netherlands (3.698,1 thousands of children and students, i.e. 4,0 % of the total number) (see Figure 4).

Figure 4. Population structure represented by school children and students in 2012. Percentages
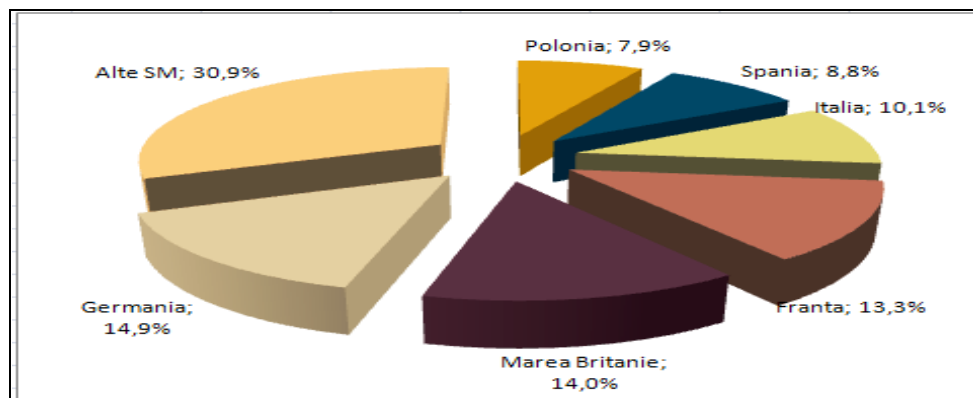
The analysis of the dynamics of school population in the period 2007-2012 indicates on the EU-28 a decreasing trend (from almost 94 million children and students in the year 2007 to 93,2 million children and students in 2012; out with 0.8 percentage points). At the level of each SM developments were differentiated, as follows:

•   In 12 SM the number of school population has increased with values between 1 and 16 percentage points (France; Luxembourg). The largest increases were registered in Ireland (by 5.7 percentage points), Spain (8,2 percentage points), the Netherlands (10.5 percentage points), Denmark (12.7 percentage points) and Luxembourg (16.0 percentage points);

•   In Sweden the number of children and students from the year 2012 has remained at the level of 2007 (2.061,5 thousands of children and students);

•   In the other 15 ms number of school population was reduced with values between 1 and   22.2 percentage points (Italy; Latvia). The largest price declines of the number of children and students in 2012 compared to 2007 were registered in Latvia (22.2 percentage points),Lithuania (19,1 percentage points), Romania (13.6 percentage points), Poland (12.0 percentage points), Slovakia (11.6 percentage points) and in Estonia (11.5 percentage points).

At the level of the MS, in 2014, the lowest weightings of the level of the university education (ISCED 8), to the population of 25-54 years, has been registered in Italy and in Romania (18,3 % in each SM). In a situation relatively close to Romania in terms of university education (ISCED 8), in the year 2014, to the population of 25-54 years, have located the following MS: Slovakia (22.3 % of the total population of the category of age of reference); Malta (23,0 %); Rep. of Czech Republic (23.5 percent); Croatia (23,7 %); Portugal (24,4 %); Hungary (25,6%).

At the opposite pole, over 40 percent of the population to the category of the age of 24-54 years, the year 2014, were situated: Belgium (40,1%); Sweden (41.3%); Great Britain (42.6%); Cyprus (44.0%); Finland (44,5 %); Ireland (45.1%); Luxembourg (49.4%). The category of the age of 55-74 years the population with highest share at the university education has been recorded in the following MS: Great Britain (31,0 % of the total population of the age group reference); Finland (31.8%); Estonia (35,3%).To the population in the age of 55-74 years the smallest weightings of the level of the University Education (Isced 5-8) were registered in Romania (7.7 percent of the population of this category of age). To this indicator at a level close to Romania was located and Malta (8.6%).

The highest weightings of the level of the university education (ISCED 8), in the year 2014, were registered in Belgium and the Netherlands (with 24,0 % each); Germany (24,0 %); Lithuania (24,3%); Denmark (21,6 %); Sweden (28,2 %); Luxembourg (28,5 %); Great Britain (31,0 %); Finland (31.8%); Estonia (35,3).

•   *The total number of students*

The total number of students in the year 2012 was of 20.2 million students and represented 21,7 % of total school population. On SM the share of the total number of students in the

school population total, in 2012, has recorded the oscillation between 6,9 % (Luxembourg) and 33,0 % (Greece). Romania with 705,3 thousands students owned the 3,5 % of the total number of students in the EU-28. The weights of the total number of students in total school population close to Romania had the following MS: Germany and Denmark (with 21.1% each); Cyprus (21,4 %); the Netherlands (21.5%); Hungary (21,6%) (see Figure 5).
Figure 5. The share of students in the school population in 2012. Percentages
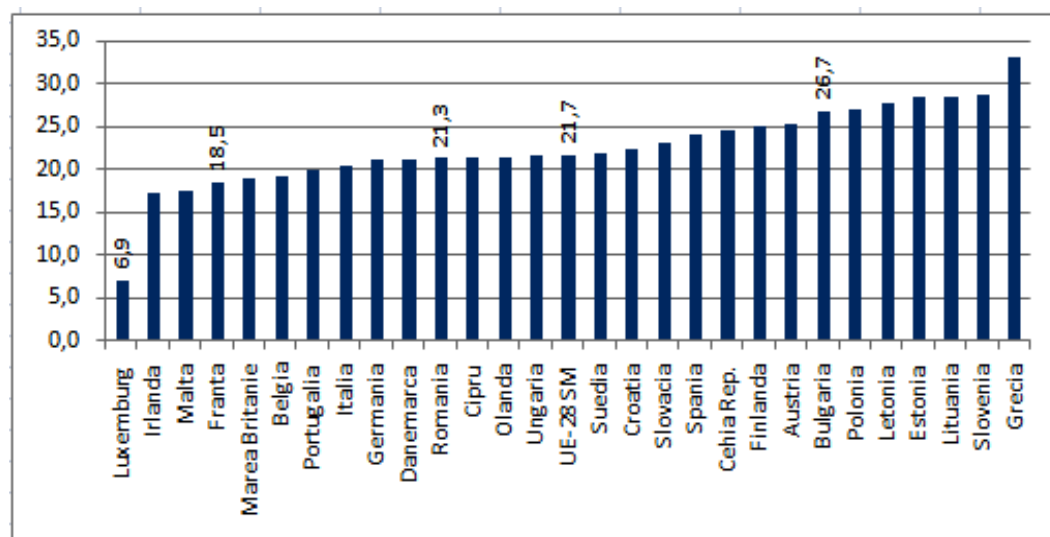
Source: Processes according Eurostat,
http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00062.
Http://ec.europa.eu/eurostat/tgm/download.do?tab=table&plugin=1&language=en&pcode=tps00051.

In 2012 compared to that of the year 2007, at the level of EU-28, the total number of students increased by 6,4 percentage points.

- *The total number of graduates of higher educational establishments*

Another indicator which characterizes the condition of higher education in the EU is the total number of graduates. Said indicator analysis took into account the share of population in the age group of 30-34 years, which have successfully completed their university education.
Thus in the year 2014, in the EU-28 the level of this indicator was 37,9 % and was dominated by the graduates of female sex (42.3%). Compared with the target set to this indicator by the Strategy Europe 2020 (40,0%) it is found that on the whole Union offset is of only 2 percentage points.
In 2014, the largest share of total number of graduates of higher education has been in Ireland (52,2%), Cyprus (52.5%), Luxembourg (52,7%) and in Lithuania (53,3%). Compared with the targets set for MS referred to by the Strategy Europe 2020 (40,0%) is found to have recorded the following offsets: Ireland (with a decrease of 7,8 percentage points), Cyprus (with an increase in the percentage 6,5puncte), Luxembourg (with a decrease of 13.3 percentage points p) and in Lithuania (with an increase of 13,3 %) (see figure 6).

- *Mobility in the educational purpose of the students in Europe*

In accordance with the provisions of the community academic mobility means the right of the students and the PhD students to recognize the transferable credits acquired to other institutions of higher education accredited/ provisionally authorized in the country or abroad. A special role in the promotion of mobility in the educational purpose of the students in Europe have funding programs of the European Communities ; they are part of the new multiannual financial framework of the period 2014 to 2020, and shall ensure that at the level of EU-28 the number of beneficiaries of the future program in the field of education and training to be almost doubled (from 400,000 to approximately 700.00 per year).

Figure 6. The total number of university graduates in 2014 and targets set by Member MEMBER Europe 2020. Percentages

Source: Processing   after: http://ec.europa.eu/eurostat/documents/2995521/6787423/3-20042015-BP-EN.pdf/b2f295ba-2E15-409c-bulb9-91c4E49c5d32
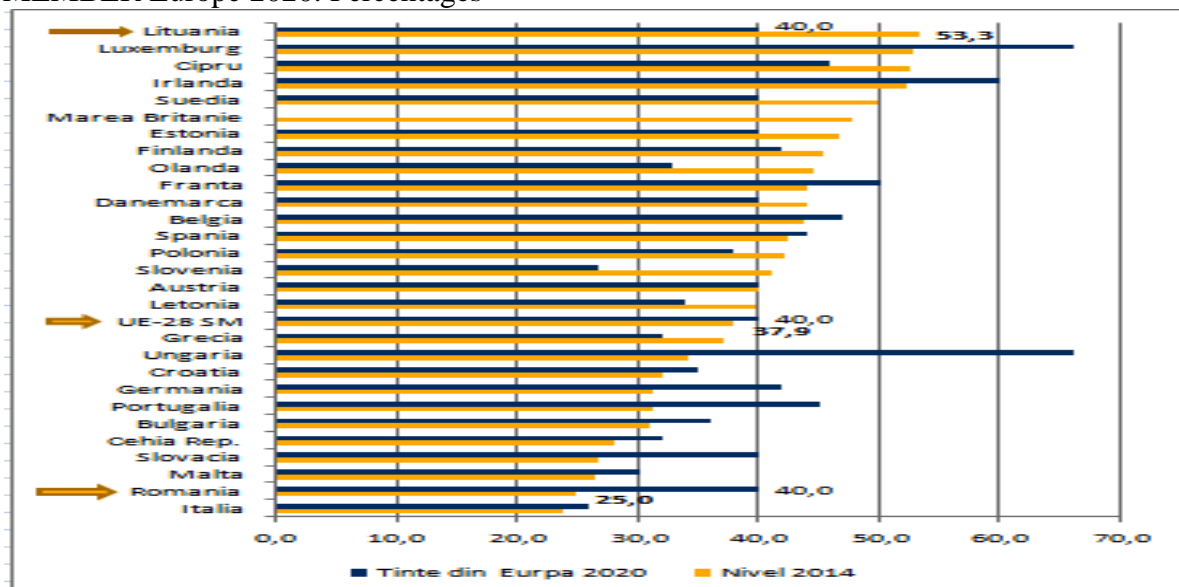
Analyze the evolution of the students in mobility on the EU-28, in 2012 compared to that of the year 2007, showed an increase of 33,5 % (from 497,1 thousands students in the mobility in 2007 to 663,7 thousands, in 2012). As a general observation: in all MS of the EU-28, excluding Northern Ireland has recorded an increase of students in mobility. The highest dynamic of students in mobility has been registered in the following MS: Lithuania (2,3 times); Latvia (2.2 times); Romania (1.85 times); Rep. of Czech Republic (1.83 times); Germany (1.64 times); the Netherlands (1,6 times). We mention that, in 2012, the students of these MS-EU-28 in mobility held 30.1 percent of the total number (199,5 thousands of students in the mobility) (see Figure 7)
A relatively low affluence of students in mobility has been registered in the following MS: Finland (2,2%); Greece (6.7%); Denmark (7,3 %); Croatia (8,7 %); Slovenia (12,5%); France (13,4 %); Poland (14.2%); Luxembourg (14.7%); Cyprus (19,2%).

Figure 7. Dynamics of student mobility in Europe in 2007-2012. Percentages
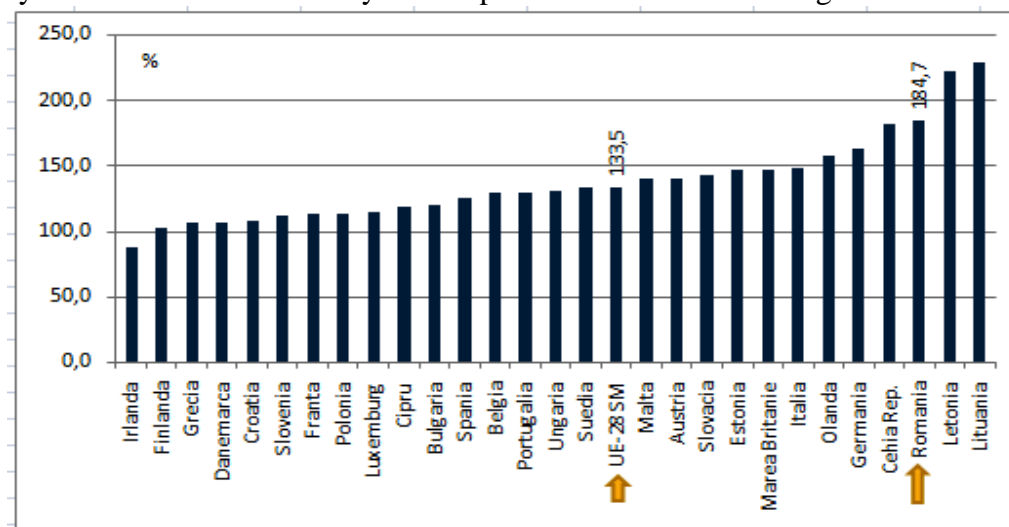
Source: Processing after:
http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00064;
Http://ec.europa.eu/geninfo/legal_notices_en.htm.

It must also be said that in the year 2012, students of these MS-EU-28 in mobility held 33,6 % of the total number (197,6 thousands of students in the mobility).

The correlation analysis between the macroeconomic indicators characterizing the state education in the European Union during 2008-2015

An accurate analysis concerning the educational levels of a country's population implies the description of the political, economic, social and demographic context. Thus the analysis of complex correlations and interdependence of economic and social phenomena, elementary statistical methods are often inadequate (Andrei and Bourbonnais, 2008). Links to statistical analysis is necessary first to identify correlations, identifying and prioritizing their influence, followed by the analysis of the forms that show causal relations and statistical measurement of the degree of correlation. Multifactorial ANOVA also allows analysis of the indicators characterizing educational system activity from Romania due to several factors and default comparison typical values in order to determine whether there are significant differences between them.

In this case the regression analysis covers the following stages: developing the regression model and estimating the model parameters, checking the accuracy of results.   The following results of multiple regression function using linear regression model of multi-factorial were obtained:

$$Yx1,x2 = 64.35 - 2.19x1 - 0.05 x2$$

The link between the variables of this model is measured by the multiple correlation report of (=0.98). We appreciate that the multiple relationship is in a linear form and very intense. The positive sign of the correlation indicates that our relationship is also direct. (see Table 1). The regression coefficient (b1) is 2.19 which means that a growth in terms of early school leaving and training (% of population aged 18-24 years-total) of just one percentage will lead to an average decrease in the annual percentage of the total number of university graduates by about 2.19%. Since t =-4.54 and p-value = 0.006 < 0.05 the coefficient b1 is valid for a significance level of 0.05 The regression coefficient (b2) is 0.05 which means that a growth in terms of percentage of the student mobility in Europe of just one percentage will lead to an average decrease in the annual percentage of the total number of university graduates by about 0.05%. Since t = -0.19 and p-value= 0.85 > 0.05 the coefficient is not valid for a significance level of 0.05.

Checking the accuracy of the multiple regression models and of the multiple correlation ratios, based on"Fisher" criterion, leads to the following conclusion: because the probability Significance F is less than 0.05 the multiple regression models is valid, with a significance threshold of 0.05.

The stochastic relation between variables is a high one. The coefficient of determination shows that 96% of the variation of the percentage of the total number of university graduates is explained by the influence of early school leaving and training (% of population aged 18-24 years-total) and percentage of the student mobility in Europe just pointing and R adjusted, but given the number of degrees of freedom. The difference of 4% representing the influence of other factors. By applying a multiple linear regression model using Eviews (EViews, User Guide, Version 8.0) software package the following results summarized in Table 1 were obtained:

Table 1: Multiple correlation between the percentage of the total number of university graduates as redundant variable and early school leaving and training (% of population aged 18-24 years-total) and percentage of the student mobility in Europe as factorial variables

Dependent Variable: Percentage of the total number of university graduates

Method: Least Squares
Included observations: 8
Percentage of the total number of university graduates= C(1) +C(2)* Early school leaving and training (% of population aged 18-24 years-total)+C(3)*
Percentage of the student mobility in Europe

	Coefficient	Std. Error	t-Statistic	Prob
C(1)	64.35410	10.02133	6.421716	0.0014
C(2)	-2.192259	0.482172	-4.546628	0.0061
C(3)	-0.058562	0.308087	-0.190083	0.8567
R-squared	0.983692	Mean dependent var		35.21625
Adjusted R-squared	0.977169	S.D. dependent var		2.774444

Log likelihood	-2.516602	Hannan-Quinn criter.	1.178225
F-statistic	150.7985	Durbin-Watson stat	1.439975
Prob (F-statistic)	0.000034		

From correlation chart we estimate that the points in the network graph (Figure 8.a) are uniformly distributed without gaps between them , so we can conclude that the link between Early school leaving and training (% of population aged 18-24 years-total and Percentage student mobility in Europe factorial variables and Percentage of the total number of university graduates the variable result is linear, direct and significant.

Figure 8.a Actual ,Fitted, Residual Graph

Figure 8.b Histogram Normally Test
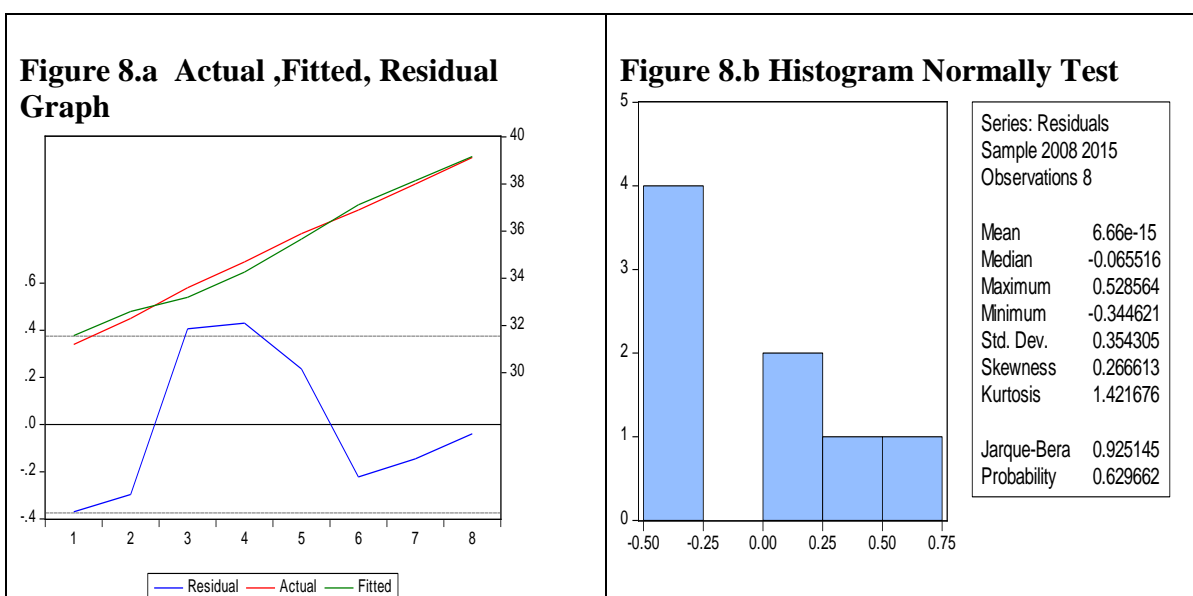
The Durbin-Watson test, used in the errors autocorrelation analysis, in the multiply model (see Table 1) has registered a computed value DW=1.43, value which was compared with the critical statistic values for α=0.05, p=3 and n=6; d1=0.95 and d2=1.54 don't necessarily imply that the errors are positively auto correlated. Verifying the normality of errors using Jarque-Bera test one observes that JBcalc=0.92 <χ2tabel=7.81 which means that the errors are normally distributed (see Figure 8.b). Because errors occur evenly scattered around the environment of the regression line (see figure 4.a), the data shows heteroskedasticity, so the variance is constant.

To detect errors autocorrelation using empirical methods that test Breusch-Godfrey. With this test will analyze the existence of autocorrelation of order k, k 1. It is assumed that the error of the regression model is given by the equation:

$$\varepsilon_t = \rho_1 \varepsilon_{t-1} + \rho_2 \varepsilon_{t-2} + ... + \rho_k \varepsilon_{t-k} + v_t \text{, for t = k,...,n, but } \sim N(0, \ )$$

In order to evaluate the statistical presence of an autocorrelation of the order k to be used the following statistical hypotheses:

$\rho_1 = \rho_2 = ... = \rho_k = 0$ the residuals are not correlated

$H_1: \rho_1 \neq 0$ or $\rho_2 \neq 0$ or $\rho_s \neq 0$ the residuals are correlated

It is seen by applying statistical software (EViews) statistical probability F is 0.19 (small) model shows autocorrelation of order 2.(see Table 2)

Table 2:Breusch-Godfrey Test for multiple regression model

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	3.833268	Prob. F(2,3)	0.1497
Obs*R-squared	5.749972	Prob. Chi-Square(2)	0.0569

The disadvantage is that regression method does not take into account the relationships between independent variables.

3. CONCLUSIONS

The priorities of the "Europe Strategy 2020" - intelligent economic growth, lasting and more inclusive - are differentiated according to the general level of development of the Member States of the Union, because each actor (member country) has a situation of socio-economic, including the status of higher education different. Therefore at the level of each SM there is a national system of education that uses the different elements of management and quality assurance in the education system.

Improvement of the quality of education, training and lifelong learning throughout the life is one of the main priorities on education and training in the action programs of the European Union - Programs - "Socrates" and "Leonardo da Vinci". At the same time the Council and the European Parliament have argued continuously with the promotion of evaluations of the quality of school and higher education and the quality objective of education has been brought to the foreground, especially in the aspects related to the cooperation (in the field of education) and vocational training. The Bologna process and Lisbon process configures the european space of education and quality assurance in education. The Lisbon European Council has established that until 2010, Europe to become the most competitive and dynamic economy in the world, based on knowledge and able to support a fast economic growth with more and better jobs".

All these elements have led to a positive evolution of the macroeconomic indicators characterizing the condition of education in the EU countries such as: the abandonment of school which is decreasing, permanent growth from year to year in the number of graduates from the university education, the development of mobility in the educational purpose of the students in Europe. In accordance with the "Strategy Europe 2020"on the increase of quality of the education system, it must be taken into account the centring of the university education of the student, expressing learning outcomes with cognitive skills and functional setting (professional and transverse), as well as by other purchases (values, belief, attitudes in their professional career and in life) are of such a

nature as to increase transparency and attractiveness of the study programs, competitiveness and efficiency of these. In conclusion, although Romania is still deficient in the efficiency in higher education, there are some indicators such as average cost per student, and the average cost of labour, both situated a low level, on one side and very high enrolment rate in higher education for high school graduates, can induce a positive change.

Also, higher education has a decisive role in the social development, economic development, cultural development, scientific and political of society, with the role to form basic skills in practicing different forms of work.Finally, everywhere in the EU, the education system is faced with the impact of new technologies for knowledge and communication, as well as to the effect of the globalisation of society, of increasing interdependence between countries and cultures.

REFERENCES

1.Andrei, T., Bourbonnais, R. (2008): Econometrie, Bucharest, Economica Publishing House, pg. 111-123;

2.Andrei, T., Stancu, S., Iacob, A. I., et al. (2008): Introducere in econometrie utilizand Eviews, Bucharest, Economica Publishing House, pg. 66-82;

3.Bergen (2004): Programul detaliat de lucru privind implementarea obiectivelor sistemelor de educaţie şi formare profesională din Uniunea Europeană",Consiliul Miniştrilor Educaţiei responsabili cu Invatamantul Superior, Bergen, 19-20 mai 2005;

4.Harman, H. H. (1967): Modern factorial Analysis, University of Chicago Press, Chicago

5.Jollife, I. T. (1986): Principal component analyses, Springer, Berlin;

6.Legea Educatiei Nationale (2011) : Starea învăţământului 2010, Proiectul Legii Educatiei Nationale si invatarea pe tot parcursul vietii,MECT;

7.Yule, U. G., Kendall, M. G. (1960): Introduction in Statistical theory, London, Griffin, pg. 216-245;

8.Kisby, C. M. (2011): Self-assessed Learning and User Satisfaction in Regional Campus Libraries, Journal of Academic Librarianship, 37, 6;

9.Korka, M.,(2009): Educatie de calitate pentru piata muncii, Bucharest, Ed. Universitara

10.Miroiu, A. şi Murgescu, B. (coord.) at all.(2015): Raport public anual – 2014. Starea finanţării învăţământului superior şi măsurile de optimizare ce se impun Consiliul Naţional pentru Finanţarea Învăţământului Superior, Bucureşti; http://www.cnfis.ro/wp-content/uploads/2015/06/CNFIS-Raport-public2014_final.pdf;

11.Miroiu, A. şi Murgescu, B. (coord.) at all.(2015): Raport public anual – 2012. Starea finanţării învăţământului superior şi măsurile de optimizare ce se impun, Consiliul Naţional pentru Finanţarea Învăţământului Superior, Bucureşti;

12.Stancu, S.(2011): Econometrie-Teorie si aplicatii utilizand Eviews, ASE Publishing House, pg. 255-260;

13.Serban, D., Cristache,S.,Tigu,G,(2012):An analysis of the Romanian pre-university education system perspectives", ICBE, 2012 , Brasov,12-13 Octombrie, pg.182-191,Editura @unitbv.ro;

14.Voineagu, V. at all (2007): Teorie si practica econometrica, Meteor Press Publishing House, pg. 277-291;

* * *   Comisia Europeană, (2012), "Raportul comun 2012 al Consiliului și al Comisiei privind punerea în aplicare a cadrului strategic pentru cooperarea europeană în domeniul educației și formării profesionale (ET 2020) ", „Educația și formarea într-o Europă inteligentă, durabilă și favorabilă incluziunii" Jurnalul Oficial al Uniunii Europene 2012/C 70/05; http://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX:52012XG0308(01)&from=E

* * *   Europea Commission, (2015), Directorate-General for Education and Culture, " Education and Training Monitor 2015 Romania", Manuscript completed in September 2015, http://ec.europa.eu/education/tools/docs/2015/monitor2015-romania_en.pdf (Accessed on 20 February 2016)

* * *   OECD (2013), PISA 2012 results: What Students Know and Can do. Student Performance in Mathematics,Reading and Science (Volume I), http://www.oecd.org/pisa/keyfindings/pisa-2012-results-volume-I.pdf (Accessed on 20 February 2016)

* * *   www.hmie.gov.uk/documents/publication/hgios.html

* * *   www.hmie.gov.uk/documents/publication/hgios.html

* * *   http://communities.trainingvillage.gr

* * *   www.eaquals.org

SUSTAINABLE IMPORTS OF TURKEY FROM ROMANIA

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Abstract

The relationships between Turkey and Romania improve greatly every year. Turkey's import is about 200 billion USD and it is the biggest partner of EU. The trade between Europe and Turkey is rising every year about 10%. Therefore the import rate has to increase more between the two countries. Some main products imported from Romania are Vehicles, Iron or steel products, Oil Electronic equipment, Perfumes, cosmetic and Rubber. However Romania has a big potential of export to Turkey. For example Romania has produced medical and pharmaceutical products, construction paints and plastic products. These products are imported more often from Turkey. Turkey balances between import and export but every year export increases. Consequently, the rate of export is more rapid than that of import. We analyze the trade between Turkey and Romania by tables and charts; we propose that Turkey improves import from Romania per year at almost 15%.

Keywords: *Logistics, Romania, Export, Import, Turkey, Black Sea*

Classification JEL: *F14, K33, O52, R49*

1. INTRODUCTION

Turkey imports many kinds of goods from quite different countries. The number of goods imported increase year to year. One of the big trade partners of Turkey is European Union (EU). Turkey has exported many goods to EU and imported a lot of items from EU. The share of EU in Turkish international trade is 43,5% and other European countries are 9,6%. However, in Turkish international trade of Asian countries increase fast. The share of Asian is 23.6%.

Turkey and Romania have a big potential to increase the international trade between each other. In the literature, there are not enough searches about the relation on international trade between Turkey and Romania. Therefore we searched about the volume

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of the international trade between two countries. We analyze the potential of the trade to improve more.

Romania is the 46th largest export economy in the world and the 38th most complex economy according to the Economic Complexity Index (ECI). In 2014, Romania exported $71.4B and imported $75.6B, resulting in a negative trade balance of $4.26B. In 2014 the GDP of Romania was $199B and its GDP per capita was $20.3K.

The top exports of Romania are Vehicle Parts ($4.73B), Insulated Wire ($3.94B), Cars ($3.78B), Refined Petroleum ($3.36B) and Wheat ($1.96B), using the 1992 revision of the HS (Harmonized System) classification. Its top imports are Crude Petroleum ($4.41B), Vehicle Parts ($3.02B), Packaged Medicaments ($2.86B), Insulated Wire ($1.57B) and Cars ($1.52B).

The top export destinations of Romania are Germany ($13.1B), Italy ($7.93B), France ($4.32B), Turkey ($3.47B) and Hungary ($2.96B). The top import origins are Germany ($14.1B), Italy ($7.98B), Hungary ($5.75B), France ($4.3B) and Poland ($3.41B).

Turkey has imported many industrial items from Romania. Romania is main partner of Turkey. It is ranked of sixth partner according of exports.

2. IMPORT OF TURKEY

We investigate how Romania will improve its exports to Turkey. It is firstly propounded the current case and secondly some goods are selected to become potential export goods. Thirdly we determine some goods which Romania can produce and export. Additionally we produce a policy on the ability of Romania in export.

In the table 1, it is showed Turkey's import from Romania. Vehicles and parts is the main item imported from Romania.

Table 1 Turkey's Import from Romania

	Value in 2014	Value in 2015	Value in 2016
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	470.270	508.154	425.433
Iron and steel	763.999	455.518	372.398
Machinery, mechanical appliances, nuclear reactors, boilers; parts	237.426	240.697	276.292
Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	163.871	157.981	169.826
Rubber and articles	146.657	127.505	148.115
Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	526.305	230.939	97.862
Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal ...	173.074	93.705	97.296
All Products	3.363.233	2.599.852	2.195.672

Source: Trade Map

Table 2 Turkey's import from other countries

Goods	High	Low
Miscellaneous chemical products	X	
Pharmaceutical products	X	
Railway or tramway locomotives, rolling stock and parts thereof; railway or tramway track fixtures	X	
Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial.	X	
Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations	X	
Toys, games and sports requisites; parts and accessories thereof	X	
Aircraft, spacecraft, and parts thereof	X	
Coffee, tea, maté and spices	X	
Other base metals; cermets; articles	X	
Fertilisers	X	

Source: Trade Map

Turkey is able to import some potential goods from Romania, because Romania has already manufactured and exported some of them. Turkey has imported this kind of goods from other countries at present. The reason why Turkey hasn't imported them from Romania is the price of the goods or the quality of the goods etc. When we compare table 2 to table 3, many goods used in Turkey are manufactured by Romania. For example Nickel and articles and essential oils are imported by Turkey a lot.

Table 3 Potential Goods can be imported from Romania

Goods	High in Short Term	Low in Short Term
Nickel and articles	X	
Musical instruments; parts and accessories of such articles		X
Miscellaneous manufactured articles	X	
Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork		X
Cork and articles of cork		X
Umbrellas, sun umbrellas, walking sticks, seat-sticks, whips, riding-crops and parts	X	
Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	X	
Essential oils and resinoids; perfumery, cosmetic or toilet preparations	X	
Organic chemicals	X	
Pharmaceutical products	X	

Source: Trade Map

When we analyses table 4, we notice that Romania export is mainly based on industrial materials. There are products imported by many countries. The demands of different products oblige Turkey to extend its trade with many countries. Some of the

products are requested by Turkey in a higher extended manner than others such as Pharmaceutical products, Plastics, Chemicals, Fertilisers etc.

Table 4 Romanian's main export goods to other countries

	Value in 2014	Value in 2015	Value in 2016
Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	3.741.331	4.211.783	3.841.718
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	2.226.204	2.691.389	2.317.028
Machinery, mechanical appliances, nuclear reactors, boilers; parts	1.472.919	1.667.319	1.523.533
Iron and steel	193.651	208.569	176.118
Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	548.298	582.786	517.667
Rubber and articles	630.044	639.878	508.197
Pharmaceutical products	332.874	236.868	194.234
Plastics and articles thereof	118.723	131.860	137.002
All Products	12.215.477	13.440.966	11.969.665

Source: Trade Map

Also is important to underline that the bilateral trade is expressed at September 30 2015, by a total of 3.331 million Euros with an increased value of 3% related to the same period of 2014. The trade balance was in favor of Romania with EUR 12 million Euros. Turkey occupies the 5th place in the export, 9th place in the import and 14th place in the top of surplus of foreign trade in the total trade of Romania (table 5).

Table 5 Trade balance Romania-Turkey

	Total	Export	Import	Trade balance
Million Euros	**3.331,646**	**1.672,45**	**1.659,395**	**+ 12,856**

Source: https://ankara.mae.ro/

On the other hand if we take a look to the results regarding 2013 and 2014 we discover a developing of mutual trade which is emphasized in the table 6:

Table 6 Trade between Romania-Turkey for 2013 and 2014

Currency	Export from Romania				Import from Turcia			
	2013		2014		2013		2014	
	Value	Percentage in total export	Value	Percentage in total export	Value	Percentage in total import	Value	Percentage in total import
Milion $	**3384,65**	**5,14 %**	**3161,80**	**4,52 %**	**2486,34**	**3,38 %**	**2617,47**	**3,36 %**

Source: https://ankara.mae.ro/

3. CONCLUSIONS

Turkey has imported many goods and services from the whole world. Turkey's import figure is tremendous. The figure arises sharply as the export the growth of increases. Import depends of GDP; thereby, export increases per capita income. Turkey has imported many items from Romania. Essentially, the figure of import from Romania is not satisfying level, because it has a transportation advantages on the road and sea. The share of the cost of transportation on the international trade with Turkey is lower than other countries.

On the other hand, Turkey is probably able to purchase many goods from Romania, because Romania produces the goods which Turkey needs. Romania has many advantage to export Turkey, for instance the transportation cost is lower than other Europe countries. Moreover it has many raw material and resources. Turkey ranks the 5th place in the Romanian export destination and 1st place among the non-EU countries. Also, Turkey ranks the 11th place as origin' country of imports from Romania.

To summarize, a good organization will decrease the cost of the transportation more and in this way the cost of international trade will lessen. Thus the volume of trade will grow.

REFERENCES

[1] Batı Karadeniz Kalkınma Ajansı, Romanya Teknik Çalışma Ziyareti Raporu, Mayıs 2014;

[2] **Bingöl E.,** Intermodal Transportation Connections of Turkey in the COMCEC Region, UND, COMCEC Meeting Ankara, 2013;

[3] **Çetin M.,** Avrupa-Kafkasya-Asya ulaşım Koridoru (TRACECA) Projesi'nde Türkiye'nin Demiryolu Stratejileri Neler Olmalıdır?, Basılmamış Yüksek Lisans Tezi, Atılım Üniversitesi, 2013;

[4] **Doğru R.,** KEİ Üye Devletlerinde Deniz Taşımacılığının Gelişimi, Rapor, 2009;

[5] **Deveci A., Çavuşoğlu D.,** Intermodal Demiryolu Taşımacılığı: Türkiye için Fırsatlar ve Tehditler, DEU, Denizcilik Fakültesi Dergisi, Cilt:5 Sayı:1 2013;

[6] **Kocabıyık Y.,** Avrupa Birliği Ulaştırma Müktebasatı, Bursa, 2014;

[7] **Mangan J., Lalwanani C.,** Global Logistics & Supply Chain Management, John Wiley&Sons Ltd., UK, 2012;

[8] Ülke Masaları ve Pazara Giriş Bülteni, Yıl:4, Sayı:10, 2014

[9] Economical Relations Between Turkey and Romani, Report 1990

[10] Ekonomi Bakanlığı, Romanya, 2015

[11] Enterprise Europe, Romanya Ülke Raporu, 2009

[12] **Ovalı S., Çelik K.,** Türk Dünyası ve TRACEA Projesi, Journal of Azrbaijani Studies, 2009

[13] **Yaşar S.,** Türkiye Romanya İlişkileri (1930-1938), Turkish Studies, volume: 7/4, Fall 2012;

[14] Ekonomi Bakanlığı Romanya T.C. Bükreş Büyükelçiliği Ticaret Müşavirliği;

[15] www.trademap.com

[16] https://ankara.mae.ro

BENEFITS OF USING PLASTIC ROAD CONSTRUCTION

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Abstract

The use of the innovative technology will not only strengthen the road construction, but also increase the road life as well as will help to improve the environment. Plastic road features numerous advantages as compared to conventional roads, both in terms of construction and maintenance. Plastic is much more sustainable and opens the door for a number of new innovations such as power generation, quiet roads surfaces, heated roads and modular construction.

Keywords: *plastic waste, plastic roads, pavement.*

1. INTRODUCTION

Imagine that constructing a road would take days instead of months. That road would last three times longer. Imagine that maintenance and traffic disruption are things of the past. And that cable and piping problems, as well as the urban water problem are solved overnight.

This may sound like a scenario in the distant future, but nothing could be further from the truth. KWS, a VolkerWessels company, Wavin and Total are working on the development of plastic roads, also known as the PlasticRoad. Every component of the PlasticRoad is being designed to make its application completely circular, with the goal of using recycled plastic as much as possible. The rate of production of waste has increased tremendously in almost all parts of the world in the past few decades. The quantities of these waste that are accumulating are causing serious disposal problems. The conventional methods of disposal are found to be inadequate.Due to population growth, industrialization, consumerism and technological development there has been a tremendous increase in the rate of production of waste. Every year, 7.2 million tonnes of hazardous waste is produced and its disposal is becoming a major issue and about one km^2 of additional landfill area is needed every year. According to recent studies, plastics can stay unchanged for as long as 4500 years on earth with increase in the global population and the rising demand for food and other essentials, there has been a rise in the amount of waste being generated daily by each household. Plastic in different forms is found to be almost 5% in municipal solid waste, which is toxic in nature. It is a common sight in both urban and rural areas to find empty plastic bags and other type of plastic packing material littering the roads as well as drains.

Due to its biodegradability it creates stagnation of water and associated hygiene problems. In order to stop this problem, experiments have been carried out having as an objective to determine whether this waste plastic can be reused productively. The

experimentation at several institutes indicated that the plastic waste, when added to hot aggregate, will form a fine coat of plastic over the aggregate and such aggregate, when mixed with the binder, is found to give higher strength, higher resistance to water and better performance over a period of time. Waste plastic such as carry bags, disposable cups and laminated pouches like chips, pan masala, aluminum foil and packaging material used for biscuits, chocolates, milk and grocery items can be used for surfacing roads.

2. THE PLASTIC ROAD

Prefabricated and modular.The PlasticRoad concept consists of a prefabricated, modular and hollow road structure made from (recycled) plastic. The prefabricated production, the light weight and the modular design of the PlasticRoad make construction and maintenance faster, simpler and more efficient compared to traditional road structures. **Hollow design**.The PlasticRoad has a hollow space that can be used to (temporarily) store water, this preventing flooding during extreme precipitation. The hollow space can also be used for the transit of cables and pipes, thus preventing excavation damages. And there are numerous other conceivable applications, including the installation of sensors or the electric charging of vehicles. The PlasticRoad is a road made of recycled plastic. It is prefabricated and features a hollow space that can be used for various purposes. This includes water storage, transit of cables and pipes, heating roads, generating energy etc. The PlasticRoad elements allow circular reuse. The advantages of the PlasticRoad:

- A lightweight prefabricated construction
- Faster construction (months shorter) and less maintenance time
- Higher quality and a longer lifespan (homogeneous and prefabricated)
- Little to no maintenance required. The material is virtually impervious to conditions such as the weather and weeds.
- The innovation is considerably more sustainable. The goal is to make the PlasticRoad out of 100% recycled plastic and to make it fully reusable. It is perfectly in line with the Cradle to Cradle philosophy and the principles of the circular economy.
- Double use of space. The hollow space in the design can be used to store water or as space for cables and pipes.
- The possibility of constant (traffic) safety and water drainage
- Everything on and around the road can be prefabricated (road markings, guardrails)
- The concept offers opportunities for further innovation. Examples include solar heated roads, light poles and traffic loop sensors.
- Contribution to the social problem of plastic waste
- Stronger road with increased Marshall Stability Value.
- Better resistance towards rainwater and water stagnation 18
- No stripping and no potholes.
- Increase binding and better bonding of the mix.
- Reduction in pores in aggregate and hence less rutting and raveling.
- No effect of radiation like UV.

- The strength of the road is increased by 100%.
- For 1km X 3.75m road, 1 ton of plastic (10 lakh carry bags) is used, and 1 ton of bitumen is saved.
- Value addition to the waste plastics (cost per kilogram increased from Rs 4 to Rs12).
- The cost of road construction is also decreased.
- The maintenance cost of the road is almost nil.
- Disposal of waste plastic will no longer be a problem.
- The use of waste plastics on the road has helped to provide a better place for burying the plastic waste without causing disposal problem.
- Employment for unskilled laborers will be generated.

Today, plastic waste treatment is largely hazardous to the environment as most of the plastic is burnt resulting in toxic gasses being released in the environment. By effectively managing the collection, separation and processing of plastic waste, the environmental damages can be limited by eliminating the waste from our streets. We can have international standard roads and pavements which are litter free. Here are economies and advantages which would accrue to various communities if the plastic road project is implemented on a wide scale.

MSWM (MUNICIPAL SOLID WASTE MANAGEMENT).Households and other units wrap all garbage in plastic bags and dispose of them. The non-biodegradable plastic bags acts as a covering on the trash preventing it from being converted into compost. At present, only 20% of the MSW is converted into compost. This can be considerably increased by 80-85% and more by systematically managing the plastic waste.

FARMING COMMUNITY. One of the foremost areas that would directly benefit is agriculture. At present, only 20% of MSW is converted into compost. This can be converted to 80-85% once the plastic from the MSW is segregated. Farmers can directly purchase from MSWM if plastic separated.

National economy benefits

- Environmental
- Employment generation
- Agricultural efficiency

When the life of a road is doubled, then the savings that accrue to the national exchequer are in thousands of crores. Segregating the plastic from the MSW at the municipal yard involves the application of resources, the cost of which runs into crores of euro. A substantial amount of this can be saved.

The Central Government's annual allocation of funds towards roads and highways is approx. 35 thousand crores. Lab tests and real-time tests have revealed that the life expectancy of a plastic polymer road as compared to a normal road is at least 100% more In addition to the savings accrued at the central level, every state Municipal Solid Waste Management would save crores of rupees by eliminating the plastic segregation process at its yards.

The concept has never been seen before in this form and with this choice of materials. This leads us to conclude that the concept is truly unique. The idea was conceived by looking at the problems that municipalities, provinces, regional water authorities and contractors like us deal with. This includes societal problems such as plastic waste, extreme precipitation, consolidation of the subsoil, an increasing need for mobility, and a

crowded subsurface. At the same time, there are increasingly stringent requirements for future roads. For contractors, asphalt is a good and decent product to build roads. However, our clients are increasingly demanding more functionality from roads. That raises the question of whether our traditional asphalt is still the answer to these increasingly stringent requirements. Roads should have an increasingly longer lifespan, shorter construction and maintenance time, be more sustainable, achieve ever-higher noise reductions and also be financially competitive. What does it take to fulfil these requirements? These questions and conditions inspired the idea of the PlasticRoad.

At the moment we are working hard on the business case for the PlasticRoad. We are researching the best way to produce the PlasticRoad. As soon as the idea proves feasible, we will build a prototype. Several municipalities, provinces and regional water authorities have already shown interest and offered a pilot location to test the PlasticRoad. Once the PlasticRoad meets all the technical, environmental and safety requirements, a pilot installation will be built to perform practical tests. Initially, the PlasticRoad will be used as a bicycle path.

SUSTAINABILITY.The idea underlying the concept is that the PlasticRoad is produced from as much recycled plastic as possible: plastic that is currently still treated as waste (dumped or incinerated). This allows plastic waste to re-enter the chain at a much higher level and greatly reduces its CO_2 footprint. Moreover, the innovation is in line with the Cradle to Cradle philosophy. We also expect it will be possible to recycle a PlasticRoad at the end of its life into elements for a new PlasticRoad (circular economy). The idea is to place the PlasticRoad directly on a surface of sand. This removes the need for a foundation. Additionally, it saves two to three layers of asphalt that no longer need to be produced. First calculations show that a road made out of PlasticRoad elements requires 85% less transport than a traditional road. Plastic waste is a worldwide problem that is getting increasingly more attention. An estimated eight billion kilograms of plastic ends up in our oceans and a great quantity of plastic is still incinerated today. In short, there is more than enough plastic for the construction of PlasticRoads.

To collect enough material for the production of the elements for the PlasticRoad, we are looking to use the plastic waste that is currently incinerated or dumped. We are also closely following the development of the many initiatives that want to retrieve plastic from the oceans and seas. When these initiatives manage to bring back large quantities of plastic to shore, we will certainly investigate whether this would form an appropriate source for making PlasticRoad elements.

Is the PlasticRoad bad for the environment? Won't friction and wear release (microscopic) plastic particles that are dangerous for human beings and the environment?
Sustainability and the environment are of paramount importance for the consortium. We are investigating to what extent wear will occur. It is a potential risk that we are taking into account. We do not expect that loose particles will cause problems with the PlasticRoad. A wear layer or special coating should be able to prevent this. Research will have to show how durable the material is and what the consequences are. We are looking for the most sustainable option.

Is the PlasticRoad toxic in case of fire?
We can use a fire retardant or fire resistant coating to prevent this. Our aim is also to avoid and minimize possible harmful substances that would be released in case of fire. This is being researched and is a factor in the choice for the right material. We will first be looking into the application of the PlasticRoad as a bicycle path, which significantly reduces the chance of a fire (as there will be no vehicles driving on it).

What type of plastic will you use?
There are many types of plastic and plastic waste, each with different properties. The difference in properties of the added plastic has a large effect on the structural shape and strength of the PlasticRoad. Within the consortium, this question is being handled by the partners Total and Wavin, both specialists in the field of plastic and the recycling of plastic. The research into this question is currently in full swing.

Is it possible to reuse the material of the PlasticRoad?
It is definitely possible to reuse the material, but the degree to which is currently being examined. The idea is that the PlasticRoad is made from ordinary everyday plastic waste.

3. CONCLUSIONS

Today there is not a surprise appearance of revolutionary, environmentally friendly and quality solutions, is amazing what mankind today using up and debris that once reached waste that once represented an environmental problem and an extra expense today is used in creating more effective alternative in terms of sustainability, financial resources and actual work to achieve these concepts. Plastic road is nothing but an alternative that leads to better results for a longer period of time with less effort conception. It is a definition of effectiveness in that it uses a material that was to come just a waste that would be brought only disadvantages for people through innovative and turns into a good high quality.

REFERENCES

USE OF PLASTIC WASTE IN FLEXIBLE PAVEMENTS, Miss Apurva J Chavan

Al-Hadidy A.I., Yi-qiu Tan (2009), *"Effect of polyethylene on life of flexible pavements"*, Construction and
Building Materials, Vol. 23.

Annette R. Hill, Andrew R. Dawson, Michael Mundy.,(2001), "*Utilisation of aggregate materials in road construction and bulk fill*", Resources, Conservation and Recycling, Vol. 32, School of Civil Engineering, University of Nottingham, Australia, pp 305–320.

Bandopandhyay T. K., (Jan. - Mar. 2010*), "Construction of Asphalt Road with Plastic Waste",* Indian Center for Plastic in Environment (ICPE), ENVIS – Eco- Echoes, Vol.11, Issue 1.

Khan Amjad, Gangadhar, Murali Mohan Murali and Raykar Vinay,(1999) *"Effective Utilization of Waste Plastics in Asphalting of Roads",* R.V. College Of Engineering, Bangalore.

R. Vasudevan.,(2011), "*A technique to dispose waste plastics in an ecofriendly way – Application in construction of flexible pavements*", Construction and Building Materials, Vol. 28, Department of Chemistry, Thiagarajar College of Engineering, Madurai, Tamil Nadu, India, pp 311–320.

Verma S. S., (Nov. 2008), *"Roads from plastic waste",* Science Tech Entrepreneur, The Indian Concrete Journal, P.No.43 - 44.

MEASURING ORGANIZATIONAL PERFORMANCE IN A MULTI-DIMENSIONAL PERSPECTIVE

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Abstract
In turbulent financial and economic present conditions a major challenge for the general management of organizations and in particular for the strategic human resources management is to establish a clear, coherent and consistent framework in terms of measuring organizational performance and economic efficiency. This paper aims to conduct an exploratory research of literature concerning measuring organizational performance. Based on the results of research the paper proposes a multi-dimensional model for measuring organizational performance providing a mechanism that will allow quantification of performance based on selected criteria. The model will attempt to eliminate inconsistencies and incongruities of organizational effectiveness models developed by specialists from organization theory area, performance measurement models developed by specialists from accounting management area and models of measuring the efficiency and effectiveness developed by specialists from strategic management and entrepreneurship areas.

Keywords: *organizational performance, measuring performance, efficiency, effectiveness, multi-dimensional model.*

Classification JEL: *L25*

1. INTRODUCTION

Organizational performance can be measured in several ways, resulting many different and subjective interpretations of performance. Although it is possible to develop a multi-dimensional model of organizational performance, building of a model that addresses all categories of stakeholders is problematic, since each category of stakeholders may have different and contradictory objectives (Sitnikov and Bocean, 2013). Therefore, there is a strong need for a unified view of organizational performance.

Although over the years there have used various measures of organizational performance (Kaplan and Norton, 1992; Murphy et al., 1996;; Robinson, 1998; Carton and Hofer, 2006; Merchant and Van der Stede, 2011; Bocean, 2011; Landy et al., 2017) no study proposed a generalized multi-dimensional model of organizational performance empirically successfully tested.

2. PERFORMANCE MEASUREMENT IN MANAGERIAL LITERATURE

There is no universally accepted definition of this concept nor a generally accepted tool for measuring organizational performance (Dess and Robinson, 1984; Chakravarthy, 1986; Carton and Hofer, 2006; Cameron, 2010; Landy et al, 2017; Venkatraman and Ramanujam, 2017).

Therefore we believe that for measuring organizational performance is necessary to develop a multi-dimensional system. In this respect, we examine mechanisms that are necessary to take into account various situations and organizational results. For this will be necessary a weighting schemes. This scheme will take into account the correlations established among the various dimensions of organizational performance.

3. THE CLASSIFICATION OF INDICATORS USED TO MEASURE ORGANIZATIONAL PERFORMANCE

In the literature there are many classifications of measuring organizational performance indicators. We adopt a classification of categories of indicators based on general classifications of performance measures found in previous research (Henry, 2003, Carton and Hofer, 2006, Wagner, 2008; Cameron, 2010; Merchant and Van der Stede, 2011; Hubbard, 2014; Venkatraman and Ramanujam, 2017): financial indicators, operational indicators, market value, economic value creation indicators.

There are advantages and disadvantages in using indicators from each categories. While each category addressed performance indicators from a unique perspective, not all organizations can be assessed all indicators.

4. DEVELOPMENT OF A MULTI-DIMENSIONAL MODEL FOR MEASURING ORGANIZATIONAL PERFORMANCE

The best indicators are those that capture different dimensions or characteristics of overall organizational performance construct. Based on this approach we built a measuring organizational performance multi-dimensional model. Through this model, we intend to show that simultaneous overtaking of these multiple dimensions is more appropriate to draw conclusions about the effectiveness of management actions than considering separately each separate dimension of performance.

Our approach to achieve a multidimensional model involves the five steps: building a sample of companies; selecting organizational performance indicators that can be calculated from the available data; testing indicators to select the most relevant to be included in the multidimensional model (by calculating correlations between variables and the selection of which signal a significant correlation); building multi-dimensional model based on selected indicators; model testing and comparisons making with individual indicators used to measure the financial performance both within the same company and between companies.

Based on financial information that can be collected for companies listed on Bucharest Security Exchange (BSE) we have selected organizational performance indicators which can be calculated based on these information. The indicators and their calculation formulas are shown in Table 1.

Table 1. Organizational performance indicators selected

	Category	Indicator	The calculation formula
1.	Rentability indicators	The evolution of gross result (GR) (Income-expenses)	[(GR of the current / GR of the base period) - 1] x 100
2.		The evolution of net result (NR)	[(NR of the current / NR of the base period) - 1] x 100
3.		Return on assets (ROA)	Net profit x 100 / Total assets
4.		Return on equity (ROE)	Net profit x 100 / Equity
5.		Return on sales - (ROS)	Net profit x 100 / Turnover
6.		Return on investment (ROI)	Net profit x100 / (debt + equity)
7.	Growth indicators	Evolution of turnover (T)	[(T of the current/T of the base period)-1]x100
8.		Evolution of the number of employees (NE)	[(NE of the current / NE of the base period) - 1] x 100
9.		Evolution of the assets	[(Assets of the current / Assets of the base period) - 1] x 100
10.	Liquidity indicators	Current liquidity ratio	Current assets / Current liabilities
11.		Quick liquidity ratio	(Current Assets - Inventories) / Current liabilities
12.		Immediate liquidity ratio	Cash / Current liabilities
13.	Leverage indicators	Debt-to-equity	Debt x 100 / equity
14.		Debt-to-assets	Debt x 100 / Total assets
15.	Efficiency indicators	Total asset turnover	Turnover / Total assets
16.		Working capital turnover	Turnover / (Current Assets-Current Liabilities)
17.		Receivables turnover	Turnover / Receivables
18.	Operational indicators	Labor productivity	Turnover / Number of employees
19.		Net profit created by an employee	Net Profit / Number of employees
20.	Market value indicators	Adjusted Tobin Q (TQ)	Capitalization / Total assets
21.		Price earnings ratio (PER)	Capitalization / Net profit
22.		Price to sales (P/S)	Capitalization / Sales
23.		Price to book value (P/BV)	Capitalization / Equity
24.	Aggregate indicators	Return aggregate index	(ROA+ROE+ROS+ROI)/4
25.		Aggregate index of market value	(TQ+ P/S+P/BV)/3

Source: Adapted from Carton and Hofer, 2006

In our research, which aims to develop an organizational performance measuring multi-dimensional model, we assume that the indicators of rentability and market value indicators are those that correlate most and best illustrates the organizational performance (based on previous research results and our observations). In order to synthetize better this measurement we used in the model two aggregate indicators of organizational performance, calculated as the average of individual indicators: return aggregate index and aggregate index of market value. Later these two indicators can be aggregated in their turn in an index of overall performance of the organization.

3. CONCLUSIONS

In this paper we reviewed the opinions of different specialists through an exploratory research of literature on organizational performance. We found that there is no consensus on what organizational performance represent, but all specialists in the area

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agreed that the performance is a multidimensional concept. Based on literature research and deductive and inductive thinking in this paper we built a multi-dimensional model to capture fully the concept of organizational performance. The model allows investigation of individual indicators correlation and generate an index of overall organizational performance of the organization. Another advantage of such an index from the fact that index allow comparability within the industry. In future research we intend to test the model within Romanian companies listed at BSE and to improve it based on the data which we collect and on the interpretation of the results.

REFERENCES

Bocean G.C. 2011. *Project based organization – an integrated approach*, Management & Marketing, Vol. IX, Nr. 2, pp. 265-273.

Cameron, K. 1986. Effectiveness as paradox: Consensus and conflict in conceptions of organizational effectiveness. *Management Science,* 32(5), pp. 539-553.

Cameron, K. 2010. *Organizational Effectiveness*, Reprint edition, Edward Elgar Pub.

Carton, R.B.; Hofer C.W. 2006. Measuring organizational performance. Unpublished, Edward Elgar, Northampton, MA, USA.

Chakravarthy, B. S. 1986. Measuring strategic performance. *Strategic Management Journal,* 7, pp. 437-458.

Dess, G.; Robinson Jr., R. B. 1984. Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit. *Strategic Management Journal,* 5(3), pp. 265-273.

Henri, J.-F. 2004. Performance measurement and organizational effectiveness: bridging the gap. Managerial Finance, 30(6), pp. 93-123.

Hubbard, D. W. 2014. H*ow to Measure Anything: Finding the Value of Intangibles in Business*. 3rd Edition. Wiley.

Kaplan, R. S.; Norton, D. P. 1992. The balanced scorecard - Measures that drive performance. *Harvard Business Review,* Jan-Feb, pp. 71-79.

Landy, F.; Zedeck, S; Cleveland, J. 2017. Performance Measurement and Theory. Routledge Library Editions.

Merchant, K. A.; Van der Stede, W. 2011. Management Control Systems: Performance Measurement, Evaluation and Incentives. 3rd Edition. Financial Times Prentice Hall.

Murphy, G. B.; Trailer, J. W.; Hill, R. C. 1996. Mearusing performance in entrepreneurship research. *Journal of Business Research,* 36, pp. 15-23.

Robinson, K. C. 1998. An Examination of the Influence of Industry Structure on Eight Alternative Measures of New Venture Performance for High Potential Independent New Ventures. *Journal of Business Venturing,* 14, pp. 165-187.

Sitnikov, C.S. and Bocean C.G. 2013. *Relationships among social and environmental responsibility and business,* Amfiteatru Economic, Nr. 7s, Vol. XV, pp. 759-768.

Venkatraman, N.; Ramanujam, V. 2017. Excellence, Planning and Performance. Leopold Classic Library.

Wagner, J. 2008. Measuring Performance – Conceptual Framework Questions, European Financial and Accounting Journal, 3(3), pp. 23-43.

VOLUNTARY GUIDELINES FOR LAND GOVERNANCE FAO CASE STUDIE EXECUTED IN COLOMBIA BASED ON WORKING WITH PEOPLE

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Abstract

The conflict of more than 50 years in Colombia, is caused mostly by land (territory, water, and resources in the same space) dispute, which has become one of the biggest obstructions to achieve peace in the country. This the reason why the Colombian government decided to implement the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT), alongside The Food and Agriculture Organization of the United Nations (FAO) and the European Union (E.U), through development of peace regional Programs and Projects. The present document studies how the implementation of the VGGT improved the land governance process in the country, enabled to dampen the conflict and encouraged people in the international competencies of the International Project Management Association (IPMA) framework, by analyzing it based on the integrated knowledge of "Working With People" (WWP). All of this, considering the workshop carried out by the FAO. Results show that the application of VGGT, based on the WWP framework, has potential to solve rural development conflicts in Colombia. Despite the promising results, the society does not take any actions for improvements. "Working With People" is a way to create trust in stakeholders, improve their competences and harmonize the importance of respecting legitimate land rights between them.

Keywords: Governance; Voluntary Guidelines on the Responsible Governance of Tenure; Conflict; Working With People; IPMA International Competencies.

Classification JEL: R50

1. INTRODUCTION

Globally, the concern about poverty, hunger, gender inequality, economic crisis and food insecurity, has increased over the years (ONU, 2017). Finding a way to solve these problems, the weak or non-existing governance caused by the land conflict, has shown itself as the reason of the existence of these problems. Based on the fact that land is the foundation to supply the basic needs, the food, the water; that is the space to build, to live, to develop as a person, as a community (Williamson and others, 2010); similarly, the fact

that managing land rights and tenure would transform a weak governance to a hard one, allowing overcome world's problems; the Food and Agriculture Organization of the United Nations (FAO) and its partners, developed the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT), to promote land governance and its responsibility (FAO, 2012).

It is important to emphasize that the VGGT is voluntary, and in case the states decided to implement them, they should guarantee responsible governance of tenure, undertaking coherent actions to legitimate tenure rights within their existing obligations as national law and international one (FAO, 2012).

Colombia is one of the countries with the largest conflict (Bautista and Joves, 2012). Conflict that has driven the country to a high level of insecurity rights that will never lead to peace (FAO, 2012). Reason why the government decided to implement the VGGT in alliance with the FAO and the European Union (E.U) (Labatut and González, 2017), to achieve a responsible land governance, therefore resolving the problems and reaching the peace. (DNP, 2014)

FAO carries out ten projects centralized in Natural resources and governance of forests, where VGGT were implemented. Land restitution, Concentration and foreignization of land, Natural Nationals Parks and smallholder agriculture, are the main topics of these area in which the FAO is working on (FAO, 2017). The cases were implemented in vulnerable areas as Antioquia, Córdoba, Meta, among other; areas with the greatest number of victims caused by the conflict. Thus, as recommended by the VGGT and by the Victim´s Law of Colombia (García-Godos & Wiig, 2014).

The objective of the present work is to study how the implementation of the VGGT improved the country's land governance, enabled to dampen the conflict and thus, encouraged the people. The analysis is done according to the International Competencies of the International Project Management Association (IPMA) framework, and the three main components of "Working With People" (WWP): ethic-social, politic-contextual and technical-entrepreneurial. The analyzed work is based on the case of concentration and foreignization of land, project carried out by FAO in Colombia in alliance with The Unit for Rural Land Planning, Land and Agricultural Uses (UPRA).

The work consists of three main parts. 1) Methodology, where is explained the model WWP including the International Competencies of IPMA, and the case of study. 2) Results, where using WWP and the IPMA competence as analyzing tool of the results for the VGGT in Colombia, describes how implementing the VGGT, the land governance is enhanced. And finally, 3) conclusions, that shows whether a new governance model in addition to applying VGGT, is based on WWP framework, for implementing rural development in conflicts areas of Colombia, can create trust in the stakeholders, improving their competences and harmonizing the importance of respecting legitimate land rights among them.

2. METHODOLOGY

The analysis is based on a study case project, carried out by the FAO about concentration and foreignization of land in Colombia. The project was born in agreement with the FAO and The Unit for Rural Land Planning, Land and Agricultural Uses (UPRA),

which is an administrative unit of a technical and specialized character, linked to the Ministry of Agriculture and Rural Development of Colombia (UPRA, 2015b), to avoid land monopoly that leads to an unequal and unproductive land concentration, inefficient use of land and lack of mobility of this resource that is present in Colombia (FAO, 2016).

After studies on land concentration and foreignization made by the FAO, lack of policies was evident, letting the conflict to be stronger and to arise the land concentration in Colombia (UPRA, 2015a); these two institutions, FAO and UPRA, decided to focus the project framed on the VGGT, to develop guidelines, instruments and technical criteria related to the distribution of land tenure and market (FAO, 2016) to improve land governance. As a result they made a conceptual, legal and institutional framework about the concentration and foreignization of the land (FAO, 2016).

As a project is evident its complexity, this is why it is necessary to apply more than the technical competences, to achieve its success. Nowadays the projects are more complex, numerous and diverse (AEIPRO and IPMA, 2009), and IMPA describes all the elements necessary to be integrated in the project management to achieve the success divided in three competences: contextual, behavioral, and technical (Ingason and Jónasson, 2009). Based on that, and on different models as the "Models of planning as a social learning" of Friedmann (Cazorla and others, 2013), the authors of Working With People (WWP), developed this new model including the relationships and mutual learning, "social learning", generated by the interaction of the agents who represent the components of the model: technical-entrepreneurial, political-contextual and, Ethical-Social (de los Ríos and others, 2014).

The technical-entrepreneurial component is identified by the private – entrepreneurial sector (Cazorla and others, 2013), which has the technical competences to generate assets or services flow (de los Ríos and others, 2014). Meanwhile the political-contextual component is identified by political organizations and public authorities at the local level (Cazorla and others, 2013), which are the key elements to link all processes through the context and contextual competences; and finally the ethical-social component which represents the behavior, attitude and values of the stakeholders, is identified for taking into account social sensitivities and is linked with behavioral competences (de los Ríos and others, 2014; Ávila Ceron and other, 2015).

Considering the above, WWP model focuses on its three components, social learning, and integrating the IPMA competences as a tool to analyze the implantation of the VGGT in the project carried by the FAO about Concentration and foreignization of land, to determinate whether it leads to enhance the land governance and dampen the conflict in the affected zones.

3. RESULTS

3.1. Political – Contextual: Agreement FAO - UPRA

Seeking to work according to the integral agricultural reform, born in the peace agreement signed between the Colombian Government and the Colombian Armed Forces (FARC), and established by the National Development Plan (PND) 2014-2018 within the "Politics of social and productive order of the territory" (DNP, 2014), UPRA develops

guidelines, instruments and technical criteria related to the distribution of tenure and the land market, as part of its duties, which contribute to a social order and a real "Transformation of the field" (FAO, 2016).

Due to the land conflict in Colombia, UPRA accompanied by the National University of Colombia, carried out specific studies on the causes of the concentration and foreignization of the land, which lead to poor land use, monopolization, land market, discrimination, among other problems (FAO, 2016), equivalent to weak land governance (Williamson and others, 2010). This study showed that the existing political blankness, and lack of policies for land use and tenure, leads to concentration and foreignization of the land and consequently, to land tenure problems. As a result, UPRA, in alliance of the FAO, both entities belonging to the public domain, decided to develop the project "Conceptual, legal and institutional framework for the concentration and foreignization of productive rural lands in Colombia as a contribution to the application of the VGGT ", seeking to tackle and mend the issues leading to better governance linking the project to the VGGT, positioning the project within the international policies.

Thanks to the fact that both institutions have the contextual competencies as orientation in projects, programs and portfolio, as well as their implementation (IPPP) (AEIPRO and IPMA, 2009), and also that UPRA as a resource-promoting partner and FAO as an institutional body acting as a national, regional and global initiatives in a mutually reinforcing circle, were able to incorporate the 5 general principles of the VGGT implementation. As well as the fact that the results contribute to the goals proposed by the PND, the FAO and the United Nations Developing Group (UNDG), and the objectives of UPRA. (FAO, 2016)

3.2. Technical - Entrepreneurial: the implementation of the VGGT

Based on the problems identified on land in Colombia in relation to concentration and foreignization: lack of a conceptual framework and analysis of the land concentration and land foreignization in Colombia, and the nonexistence of a study in particular to perform a specific analysis of concentration and foreignization; the final objective of the project was to "Develop guidelines, technical criteria and instruments that permit the orientation of the public policy related to the concentration and foreignization of rural productive lands in Colombia that contribute to the planning of property management as an application of the VGGT" (FAO, 2016). With an implementation period, initially of 8 months, due mainly to the low supply of professionals with technical specifications to fulfil the project activities, it was delayed 5 month. The management of the technical skills of: problem solving, change and communication mainly (AEIPRO and IPMA, 2009), an agreement was reached to extend the project until November 30, 2016 (FAO, 2016)

Both FAO and UPRA, as part of the stakeholders, and due to their functions as institutions, also provided the necessary technical support to carry out the activities and to achieve the established goals. From the review of the state of the art, expert panels developed a case study in two municipalities: Puerto Gaitán in the department of Meta and Monteria in the department of Cordoba, with their respective documents; having as a purpose to generate as deliverables: 1) "a document of the preliminary conceptual framework of the concentration and foreignization of lands in Colombia"; 2) "a document

of diagnosis of the phenomena of concentration and foreignization of lands in Colombia that includes its causes; in which the typologies of these phenomena and their respective characterization are established "; and 3) a document consolidating the case studies (FAO, 2016). This is related to the many technical competence elements that institutions have, since according to IPMA (AEIPRO and IPMA, 2009) these elements, are necessary to start, manage and close a project. In addition, and as evidenced in the previous subchapter, project results contribute to the goals of other stakeholders such as the national government, identified by the goals proposed in the DPN, UNDG, FAO and the objectives that UPRA has institution. (FAO, 2016)

3.3. Ethical – Social: Principles of the Voluntary Guidelines on the Responsible Governance of Tenure

Although, the main objective of the project was the creation of a conceptual framework, the ultimate goal is to provide civil society, especially those most vulnerable and affected by conflict (victims), welfare, respect, equality, inclusion, food security, stability; a decent life (DNP, 2014); due that the conflict has been in processes of territorial control, through violence, incurring violation of human rights (FAO, 2016). That is why they worked under the framework of the VGGT, because of its principles of implementation to achieve better governance and conflict resolution. The most representative principles in the project were: Human dignity, non-discrimination, equity and justice, holistic and sustainable approach, and continuous improvement (FAO, 2012). Implementing the VGGT, the project directly took into account the values, interests, and needs of civil society; which according to De los Rios and others (2014), is what makes the ethical-social dimension of WWP the most complex. In addition, achieving the proposed objectives of both, the project and those of the stakeholders, reflects the synergy in the relationship of the parties, leadership, efficiency, commitment and motivation in executing the project (AEIPRO and IPMA, 2009).

3.4. Social learning

The interaction of the three components described above, result in the strengthening of inter institutionality and the outline of a second phase of the project, considering the lessons learned based on both elements of success and difficulties; according to Cazorla (2001) those are indicators that produce shared knowledge on behalf of social learning.

In addition, this interaction allowed the development of actions that identified the importance of the project, within the context of Colombia, the necessary technical and ethical aspects, contributed by the principles of the VGGT, to envisage the sustainability of the project in time, thanks to the proposal to construct indicators on concentration and alienation of land (FAO, 2016).

4. CONCLUSIONS

Using WWP as an analysis tool, it was possible to identify that the implementation of the VGGT in the project carried out by the FAO in Colombia, about Concentration and

foreignization of land, does enhance the land governance, damped the conflict, and encouraged the people.

The WWP framework allowed to identity that implementing the VGGT lead to create policies and aliments to better management of the tenure of the land and hence to obtain a strong and responsible governance of the land, which leads to a chain of wellbeing which includes: security rights, secure people, encouraged the people, equitable distribution of the land, less conflict, access to productive land, increase productivity, food security, greater economy, less poverty, people with basic needs covered, etc.

Despite, through analyzing the project in its three components it is important highlight that the relationship with the civil society and the bottom – up approach (Cazorla and others, 2013) are not present. Reason why is recommended to consider this essential part of the model WWP, to achieve a plenty of success, because as Cazorla and others (2013) point out "have to be developed BY the people and not FOR the people".

REFERENCES

AEIPRO, A. E. de I. de proyectos, & IPMA, I. P. M. A. (2009). *NCB - Bases para la Competencia en Dirección de Proyectos*. (UPV, Ed.) (3.1). Valencia.

Ávila Ceron, C. A., de los Ríos Carmenado, I., Rivera, M., & Martín, S. (2015). Rural Development Planning in Colombia'S Conflict Zones: a Proposal From the Wwp Model. *Proceedings of the 7th International Scientific Conference Rural Development 2015*, (February).

Bautista, F. J., & Joves, Á. G. (2012). La negación del conflicto colombiano: un obstáculo para la paz. *Espacios Públicos*, *15*, 9–34.

Cazorla, A. (2001). Presentación del libro " Planificación en el ámbito público : Del conocimiento a la acción " de John, 41–54.

Cazorla, A., De los Ríos, I., & Salvo, M. (2013). Working With People (WWP) in Rural Development Projects: a Proposal from Social Learning. *Cuadernos de Desarrollo Rural*, *10*(70), 131–157. Retrieved from

de los Ríos, I., Herrera, A. T., & Guillén, J. (2014). Complexity in project management : conceptual analysis based on the Working With People model, 2, 7008.

DNP, D. N. D. P. (2014). Bases del Plan Nacional de Desarrollo 2014-2018. *Departamento Nacional De Planeación*, 861.

FAO. (2012). *Responsible Governance of Tenure*.

FAO, F. and A. O. of the U. N. (2016). *"Marco Conceptual, legal e institucional de la concentración y extranjerización de tierras rurales productivas en Colombia, como una contribución a la aplicación de las directrices voluntarias sobre la gobernanza responsable de la tenencia de la tierra"* (Vol. UTF/COL/07). Roma.

FAO, F. and A. O. of the U. N. (2017). FAO - Colombia. Retrieved April 6, 2017, from http://www.fao.org/colombia/programas-y-proyectos/es/

García-Godos, J., & Wiig, H. (2014). *The Colombian Land Restitution Programme Process, results and challenges, with special emphasis on women*. Norwegian Institute for Urban and Regional Research.

Ingason, H. T., & Jónasson, H. I. (2009). Contemporary Knowledge and Skill Requirements in Project Management. *Project Management Journal*, *40*, 49–69.

Labatut, B., & González, N. (2017). FAO. Retrieved March 19, 2017, from
http://www.fao.org/news/story/es/item/430823/icode/

UPRA. (2015a). Bases para la formulación de la política pública de Gestión del Territorio
para Usos Agropecuarios (GESTUA) -Documento en discusión-, 77.

UPRA, U. de P. A. (2015b). Mimisterio de Agricultura y Desarrollo Rural. Retrieved April
7, 2017, from
https://www.minagricultura.gov.co/Documents/UPRA_Oferta_Institucional.pdf#searc
h=UPRA

Williamson, I., Enemark, S., Wallace, J., & Rajabifard, A. (2010). Land Administration for
Sustainable Development, (April), 506.

ASPECTS REGARDING ROMANIA'S TRADE WITH SWITZERLAND IN THE POST-ACCESSION PERIOD

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Abstract:

In this paper it is presented in a synthetic manner the overall evolution of bilateral trade between Romania and Switzerland in the current period of post-accession of our country to EU. Thus, the legal and economic current conjuncture creates favorable prospects for Romanian export aiming a range of products on the Swiss market, such as: machinery, textiles and clothing products, furniture and other interior elements, metallic construction, electrical and electronic components. Also, relative to Romanian exports of textile and clothing addressed to Swiss market it is necessary a greater attention on the current trend of orientation which is becoming more accentuated towards textile fabrics from natural fibers, correlated to the involvement of employers' branch associations in establishing contacts with similar associations from Switzerland. Further, concerning Romanian imports from Switzerland, the emphasis is placed on the following groups of products: chemical and pharmaceuticals products, machinery, electrical equipment, optical, photographic and measurement products. Moreover, in conjunction with these issue it can be noticed an improvement, due to the elimination of customs duties of industrial products in trade conducted between all the countries of EU and Switzerland it will inevitably lead to entry on Romanian market of Swiss products with high quality designed to meet the requirements of domestic demand.

Keywords: Swiss market, free trade agreement, trade relations, legal regulatory framework, Romanian companies

Classification JEL: O24, F14, F19, F23, F31

1. INTRODUCTION

Regarding the analyzed issue an element of maximum visibility is the international trade according to certain recent economic studies published is generally considered as an important factor of economic development. Thus, trade relations should be seen as a crucial factor for economic cooperation between states participating in the global economy. (Pawlas, 2014)

Relative to the economic and legal framework of relations between Romania and Switzerland it is important to note that bilateral trade between Romania and the Swiss are essentially based on the following EU's legal instruments such as: the Free Trade Agreement between the Swiss Confederation and the European Communities in 1972 and a series of bilateral agreements between the EU and Switzerland in 1999 and 2004 in the fields of free movement of persons, air transport, land transport, agriculture, technical barriers in international trade procurement market agricultural products, environment, statistics, taxation (taxation of interest). The majority of bilateral agreements between Switzerland and the EU are traditional cooperation agreements. As a rule, the contracting parties retain their independence and each is responsible for implementing and applying the agreements on its own territory.

2. THE LEGAL REGULATORY FRAMEWORK OF TRADE RELATIONS BETWEEN ROMANIA AND SWITZERLAND

When we refer to the legal regulatory framework of bilateral trade between Switzerland and Romania it is necessary to point out the essential features of Free Trade Agreement from 1972 concluded by the European Economic Community (EEC) and Switzerland. Thus, by its regulations this agreement, gives the Swiss export industry access to the EU market and facilitates trade with its most important market globally, consisting of around half a billion people.(Federal Department of Foreign Affairs, 2016)

By its content, the agreement has an accentuated economical character, having the role to create a legal framework adapted to the conditions of competition.

Moreover, the parties have commited to improve the conditions of access on market. The objectives of this Agreement are essentially the following:

- to promote through the expansion of trade the harmonious development of economic relations between the parties and intensifying the economic development;
- to ensure fair conditions of competition in trade between the two countries;
- to contribute in this way to the harmonious development and expansion of European trade by removing barriers to trade,
- to strengthen cooperation between the parties.

Thanks to the Free Trade Agreement, customs duties on industrial products such as machines, clocks and watches were progressively abolished. Quantitative restrictions on imports (quotas) and measures with an equivalent effect are forbidden. Therefore, bilateral trade and economic cooperation have risen significantly, as the application of reductions and eliminations of customs duties. (Aldea and Botez, 2005)

However, the current EU's legal framework regarding trade relations influenced positively the entire climate of bilateral trade between Romanian and Swiss economic agents. At the same time, the bilateral agreements are also applied by Romania in virtue of its quality as member state of EU that automatically adopted and implemented EU legislation, the international treaties and agreements with third countries. Furthermore it can be considered that it is necessary some remarks on the legal regulatory framework of bilateral trade between Romania and Switzerland. Thus, it is noticeable that in post-accession period to the EU, our country in the field of foreign trade with Switzerland applies the legal framework of EU that has as main effect the development of trade conducted between Romanian and Swiss companies(Fota, 2008).

At the same time in order to stimulate trade transactions between the two countries which are still far from being reached to their economic potential, I appreciate that becomes necessary for Romanian companies establishing and implementing the following directions of action on export:

- the alignment to conditions of quality and payment, delivery terms, etc., practiced by Western European companies on this market;
- the enhancement of capacity to deliver relatively large quantities of goods, such as cars, electrical equipment, hardware, textiles, furniture, miscellaneous items, vehicles, aircraft and transport equipment, plastics and articles thereof.(Ambasada României în Confederaţia Elveţiană, 2014)

Also the achievement of these strategic objectives will also generate significant changes both in terms of volume, and the structure of Romanian imports from Switzerland,

resulting in consolidating traditional imports of machinery, electrical equipment and chemical products and pharmaceutical products which enters currently on the Romanian market with duty free , that will generate an increase in import volume.

Certainly by the advantages derived from the Free Trade Agreement between the Swiss Confederation and the European Communities benefit Romanian exporters beginning with 1.01.2007 because especially they can promote or respectively to increase exports of products admitted for import into Switzerland, with zero duty or lower than previously practiced. (Vătăşescu and Albu, 2008)

Even under these circumstances, Romanian exporters should take into account at least:

the competitiveness in relation to quality - price, both to products from the EU and from other geographical areas;

maintaining the agreed price throughout the contract and the compliance with terms of delivery engaged;

providing the stimulative facilities of payment from your Romanian suppliers for Swiss companies wich are assaulted by other foreign suppliers, especially China.

In assessing the impact of application by Romania of the EU's legal framework regulatory on trade relations with Switzerland it has to consider the major effects on bilateral trade, between Romanian and Swiss companies that will appear on medium and long term.

In this sense we emphasize that on medium and long-term the effects can be positive to the extent that Romanian producers, under the pressure from imports competition are performing and specializing in products at which they have a competitive advantage, the growth domestic demand in these conditions is covered by them. The situation of Romanian exports on Swiss market can be improved only if the demand will be increased for the products made in our country, in the context of eliminating or reducing the customs duties.

 Thus, Romanian companies will have to adapt their trade strategy to high standards and demands encountered on the Swiss market taking into account the following elements:

increasing the recovery of Romanian goods on Swiss market by improving the competitiveness determined by removal of customs barriers;

 the possibility of diversifying Romanian exports to Switzerland;

increasing the number of business opportunities;

the opportunity to import and sell goods from this geographical area on the Romanian market at an affordable price;

3. CONCLUSIONS

The aplication of the current EU 's economic and legal framework in the field of Romania's trade relations with Switzerland offers a wide range of notable opportunities among which can be mention: the widening supply of quality goods and services on Romanian market; duty-free import of industrial goods with favorable consequences for enterprises producing / user of those goods to domestic consumers; stimulating domestic producers to become more performance, under the pressure of imports competition; accelerating the specialization in products to which they have a competitive advantage; improving the quality of export production. Therefore for Romania as member state of EU,

the Swiss market gives the opportunitie for Romanian companies to compete directly with EU and extra-EU enterprises. Thus, the involvement of Romania Furniture Producers Association and Romania Foresters Association in the organization of joint stands at specialized fairs or initiating the trade missions in cooperation with similar Swiss associations in the export of furniture and interior elements, can generate positive effects in stimulating the Romanian export of furniture and wooden products on this market.
 In another order of ideas, it is well known the high degree of competitiveness conjugated to the requirements and high quality standards for products sold on Swiss market. In these conditions, Romanian companies must rise at the level of quality imperatives applying to all categories of goods and services that enter on Swiss market in order to obtain a competitive advantage in the face of competition exerted by foreign enterprises.

4. BIBLIOGRAPHY

[1] Aldea, V., Botez O. GH, *Aderarea României la Uniunea Europeană și implicațiile sale asupra comerțului exterior*, Editura AGER-ECONOMISTUL, București, 2005, p. 133-145.
[2] Fota, C., *Integrarea României în Uniunea Europeană - ante și post aderare-* , Editura Universitaria, Craiova, 2008, p. 172-173.
[3] Pawlas I.M., *The evaluation of trade relations between Poland and Germany from 2003 to 2012*, Journal of International Scientific Publications, Volume 8,/2014, p. 224-225
[4] Vătășescu, M., Albu, C., *Relații economice internaționale,* Editura Vox, București, 2008, p.314-319
[5] *** Ambasada României în Confederația Elvețiană, *Îndrumar de afaceri Elveția*, Berna, 2014
[6] *** Federal Department of Foreign Affairs, *Switzerland and the European Union*, Bern, 2016

THE ROLE OF UNIVERSITIES IN SUSTAINABLE DEVELOPMENT CASE STUDY: TURKEY AND ROMANIA

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Abstract

Sustainable development is a complex concept which involves social, economic, political, cultural changes, so transformations of economy and society. Its large content refers in general at the minimum requirements for a healthy lifestyle both for today and for future generations. In this context, universities appear as important institutions for the development phenomenon that differs from the concept of growth. The phenomenon of sustainable development is expressed not only by economic growth but also by generating wealth which is distributed equally between countries, regions, and income groups while protecting environmental values. At this point, universities play a key role in sustainable development. Universities contribute to improvement of environmental awareness by raising the level of education and also changing social and cultural structure. Besides contributing to sustainable development through projects prepared by the universities. Universities contribute to both economic development and sustainable development. At this point, the number of universities is increasing day by day, and it is expected that the universities will value sustainable development. The aim of this study is to demonstrate the role of the universities in sustainable development with a comparative analysis between Turkey and Romania.

Keywords: l Economic Development, Sustainable Development, Universities.

Classification JEL: O10, O11, Q01

THE PRACTICAL LIMITS OF FLEXIBILITY IN THE MANAGERIAL CONTROL SYSTEMS OF STRATEGY - A PARADIGM BASED ON DYNAMIC CAPABILITIES, KNOWLEDGE BASED VIEW AND REAL OPTIONS

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Abstract

This proposal aims to provide a closer image to everyday practice of the dynamic capabilities in a perspective that capitalize understanding of the value of flexibility and the the binomial flexibility - stability and integrates knowledge based view and real options in order to provide a better connection to performance.

Many definitions regarding dynamic capabilities have been enunciated over time, starting from the ability of integration, building and reconfiguration of internal and external competences, in order to manage better the environments suffering of accelerated change (Teece, 1997). Actually, the dynamic capabilities represents those high value capabilities that govern the rate of competences exchange(those ordinary or operational) and help the joint-stock company on both short and long term (Winter, 2003; Zahra, 2006). The dynamic capabilities are connected to the ability of dynamic creating and managing over organizational strategies and configurations, so as to reach the competitive advantage and improving the viability (Teece, 1997; Helfat, 1997, Winter, 2003).

The dynamic capabilities has allowed mechanisms to be explained, concerning those organizations that managed to survive in volatile or disorderly environments, or managed to reach a position over the sector's average level, in a long lasting way. Although there is a particular interest to dynamic capabilities especially came from practitioners, the current literature it is not yet sufficiently clear to evoke ways of operationalizing or use of the dynamic capabilities in current practice. The paper presents the limits of dynamic capabilities in practical applications.

The limits of dynamic capabilities paradigm are:

-   understanding the accurate method and mechanisms on creating and maintaining the dynamic capabilities;

-   dynamic capabilities has provided few benches over the effective way on how managers have coordinated, integrated and reconfigured the already existing competences in accordance to the environment (Helfat, 2000; Zott, 2003);

-   dynamic capabilities has not allowed the emphasizing of quantitative issues, angle that imposed the connection to the real options;

-   there is not enough empirical research to explain management flexibility in practical situations, so you can not understand the reaction to the management of strategic initiatives in terms of market volatility;

-   the real options valuation hypotheses are restrictive and could lead to problems in the context of dynamic strategies; qualitative analysis of flexibility to provide additional information on the value of flexibility;

-   the stochastic analysis of the value of managerial flexibility in the context of real options analysis (ROA) should be resumed in a broader context of the whole management process of evaluating options and

continue management of options; combining tools for options valuation with more holistic approaches of projects flexibility could bring new contributions to heuristic management of flexibilit

Keywords: *strategy; management control; dynamic capabilities; real options; knowledge based view*

The research methodology

The present paper is based on the study of a set of three situations in which it is possible to understand the limits of the flexibility in the management control systems of a new strategy starting from a paradigm based on dynamic capabilities, knowledge based and real view options. The focus is on understanding the performance, beyond the strategy formulation and monitoring in a setting closer to practice understanding of the link between dynamic capabilities and real options analysis. The outperformance in turbulent environments or characterized by uncertainty can not be evaluated without relying on social and human performance and understanding the psychosocial aspects of the processes of rapid change. In addition, there are inertial effects and combinations of these phenomena of resonance or hysteresis at equilibration movements in the context of managerial control process.

The hypotheses research

The 1st objective: The integration of the managerial control and the flexibility in the equation of the dynamic capabilities for a better understating of the organizational behavior in turbulence and volatility.

Focusing is carried out over the variations occurred at the level of environment changing velocity, and over the way these variations influence the feedback features received from systems. Hereinafter, these can influence the control systems and the forces of exploitation and exploration that guide and drive the capabilities processes of coordination, integration, learning and reconfiguration.

The managerial control systems represent those tools able to enhance the organizational behaviors and the final results. An explanation was reached, as regards the way the managerial control uses some methods of feedback processing and in order to provide clear understanding of a company's position and potential scenarios. The analysis starts from the enhancement control mechanism (Simons, 1995), which rely in four control systems (points of view, barriers, diagnostic and interactive) that have produced various behaviors on influencing the functionality and performance, which are essential in terms of uncertainty and changing. The point of interest focuses here over the long term success, by exploiting and filtering the current competences, as well as setting up new accurate competences, achieved by means of exploitation.

The research proposal has emphasized the influence of operational and environment frame over the design and efficiency of the managerial control system. The influences of velocity and quality of changing processes, as well as the answer method of the dynamic capability have been tested.

The managerial control system proved to be an enhancer of the dynamic capabilities, thus strengthening the Eisenhardt- Martin (2000) hypothesis, by which

dynamic capabilities were seen as strategic tools of exploitation over resources configuration steps. Secondly, the dynamic capabilities can be reached by means of many independent and complementary control systems. Finally, one might emphasize that the environment and organizational frame situations will be able to influence in a functional and causative way the efficiency of the control systems, as well as their potential on creating and managing the dynamic capabilities.

The 2nd objective: The integration of knowledge based view on the paradigm of dynamic capabilities

The theory of dynamic capabilities has been initially created in order to understand the way strategies are built and managed, in those environments facing fast changing. The theoretical analysis has been affected by certain directions related to the way an organization changes by itself. The boundedness is due to the deficient recognition of social development nature, regarding the excessive focus over the high-value management part, as well as on amplifying the ways of controlling the level of organizational knowledge.Such limitations can be reduced by starting from the paradigm of the knowledge based vision. Regarding from this point of view, the ability of organizational changing can be explained by starting from the high-value level capabilities, being in connection to the organizational knowledge. One might identify three capabilities: connectivity, the learning culture and the knowledge management.

The proposed objective refers to an alternative vision over the dynamic capabilities, which framed a more thoughtful and concomitant understanding, being synergic to the organizational and changing knowledge. Regarding from the knowledge based vision point of view (Grant, 1996; Tsoukas, 1996), the approach based on dynamic capabilities has suffered from the restrictions and hypothesis that reduced the explaining strength, the distortion given by the static knowledge concept, the high-level management drive and the illusion of control. Such approach has rather handled knowledge with "hyper-active" position thus created, transferred and connected within the frame of managerial control and in conditions. The influence of heterogeneous nature was not recognized, as regards the organizational knowledge and social interactions.

By means of using the elements specific to knowledge based vision and introduction of a specific set of high-value level capabilities, the following contributions might result: reconfiguring the Zollo- Winter mechanisms of learning, which are inevitably based on routines and capabilities; the proposal of a complementary version of Eisenhardt-Martin paradigm, where dynamic capabilities are experimental and unique. A new way is provided over the generalization and of creating a new challenging mechanism dedicated to long lasting competitive advantage, thus offering a holistic image of abilities and knowing the organization globally. Neither the part of high-value level management(as in the classical theory of dynamic capabilities)nor the new way of explaining the mechanisms of performances growth are the only one taken into account.

The 3rd objective: The integration of real options within the framework provided by the first and second objectives, in order to create a global picture of the performances offered by the dynamic capabilities.

The real options have proposed to quantify and test the value and significance of the flexibility, in conditions where decisions embedded the uncertainty, as well (at the level of business and associated to the strategic decisional process).

The option signifies the right, but not the obligation to take an action in the future. As regards the real options, the initial investment has offered the opportunity of continuing, extending or abandon the using of an asset, in accordance to the environment conditions. The real options represent that ingredient of continuous choosing and management of the future journey of actions, in accordance to the gradually disclosing of information. The decisions can be delayed or accelerated in sequential steps, in those decisional angles, and the manager can benefit of some handling time, in order to choose the managerial solution and the answer towards future uncertainty (Brach, 2003). Creating a strategy starts from the image or vision of the future, and implementing the strategies should be considered as a series of options (not being a series of static flows), thus involving the understanding of flexibility value.

The concept of flexibility has allowed the understanding of changing options, as regards the production within the frame of variable change (Kogut, Kulatilaka 1989).Kulatilaka(1993) emphasized the flexibility within the frame of changing between various ways of processing, and Kulatilaka, Trigeorgis (1996) brings an analysis over the generic flexibility of change, between those alternative technologies or various ways of processing. Starting from the costs of conversion, the decisional rules have shown those constancy consequences or hysteresis effects. In such situation, the options of postponingan investment, of extending or compressing of production, the temporary cessation or abandonment – dissolution ways were taken into view. Huchzermeier, Cohen 1996 explained the issue of conversion costs, by taking into account the setting of exchange value, as stochastic diffusion processes and the connections between countries.

The networking options have always determined the manufacturing flexibility, by means of the production performance and the network connections.

The paper ends with the main conclusions on the vision practitioners and how the structure of this proposal may contribute to a better understanding of the performance of a strategy based on volatility in terms of exploring the limits flexibility and control of resources and capabilities.

References

Adner, R. and C.E. Helfat (2003), 'Corporate effects and dynamic managerial capabilities', Strategic Management Journal, 24 (10)

Chenhall, R.H. (2003), 'Management control systems design within its organizational context: Findings from contingency- based research and directions for the future', Accounting, Organizations and Society, 28

Teece, D.J., G. Pisano ShuenA (1997), 'Dynamic capabilities and strategic management', Strategic Management Journal, 18 (7), 509–33.

Weick, Karl E. (1988), 'Enacted sensemaking in crisis situations', Journal of Management Studies, 25 (4), 305–317.

Widener, S.K. (2007), 'An empirical analysis of the levers of control framework', Accounting, Organizations and Society

Winter, Sidney G. (2003), 'Understanding dynamic capabilities', Strategic Management Journal, 24 (10), 991–95.

Winter S. (2003), 'Understanding dynamic capabilities', Strategic Management Journal, 24 (10)

Zahra Shaker A., Harry J. Sapienza and Per Davidsson (2006), 'Entrepreneurship and dynamic capabilities: a review, model and research agenda', Journal of Management Studies, 43 (4), 917–55.

Zollo M. and S.G. Winter (2002), 'Deliberate learning and the evolution of dynamic capabilities', Organization Science, 13.

SUSTAINABLE AGRICULTURE – FACTOR OF CONSERVATION OF THE NATURAL CAPITAL

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Abstract
The land fund represents one of the most valuable components of the natural capital and managing the land resources is an action based on knowing the economical lawfulness through which it is intended the providing of the financial resources in a rational and efficient way. The concept of sustainability applied to agriculture supposes that the key-resources such as soil, water and nutritive substances cannot be consumed beyond limits and without being renewed afterwards. The benefits of sustainable agriculture for society, economical entities and individuals include conservation of biodiversity, decreasing the carbon emissions, conservation of genetic diversity of vegetable crops and the fauna. This article points out the relation between practicing a sustainable agriculture and protection and conservation of natural capital.
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Keywords: sustainable agriculture, natural capital, land fund.

MANAGEMENT OF NON-FORMAL EDUCATION ACTIVITIES IN ACADEMIC ENVIRONMENT IN SUSTAINABLE DEVELOPMENT CONTEXT

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Abstract
The study wants to show the need of correlation between government strategies and policies with student's specific problems in non-formal education area. Non-formal educational activities are affected by factors outside their area of influence. The main factors that directly influence the management of non-formal education are of political, social, economic and technical nature. This scientific research paper, proposes main strategic goals and directions of action, for improving non-formal educational activities and increasing management performance, in the context of sustainable development of universities in Romania.

Keywords:. management, non-formal education, academic environment, development, sustainability.

SPORTS PARTICULARITIES OF BUSINESS MANAGEMENT

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Abstract
Organization, administration and management are driving forces of sport organizations in any country. These three must work together for an association, club, league, event organizer or regional sport organization to achieve the highest level of efficiency and to solve problems that arise. A viable organization forms a coherent, interdependent and interactive units, sections or departments that operate within a system.

Keywords: management, organization, sport.

AGRITOURISM: A PILLAR OF SUSTAINABLE TOURISM FOR DEVELOPMENT IN THE RURAL AREAS

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Abstract

   The General Assembly of the United Nations declared 2017 as the International Year of Sustainable Tourism for Development emphasizing the potential of tourism to promote the Sustainable Development Goals (SDG-2015-2030). The International Year aims to support a change in policies, business practices and consumer and operators' behavior towards a more sustainable tourism industry.

   The Sustainable Tourism represent for the Local Communities, all around the world, the opportunities to strengthen the SDG implementation.

   The paper will analyse the state of art, the structure, the major actors as well as processes and synergy of local communities and tourism.

   Following with the empirical approach present, in the framework and vision of the LLCD-Local Led Community Development, Smart Communities an Smart Territories a possibile model of managements and measures it to promote, is a pillar to stimulate a consolidate and visible Sustainable Tourism Movement to contribute at the improvement of quality of life in the countrysides as say us the Declaration of Cork 2.0.

   The result are that the agritourism can be considered the potential main driving forces in developing multifuncionality of agriculture and parallely improving sustainabilty of rural areas. To demonstrate this the authors present some compared data about the cash flow balance sheet of the traditional farms and multifuncional farms. This strategy is strictly harmonizeded with the roadmap represented by the Sustainable Development Goals 2015-2030 (Transforming our world: the 2030 Agenda for SD), the Paris Agreement of the COP21& 22 –UNFCCC, the Europe 2020, the CAP 2014-20120 as well as the Agenda of the Circular Economy proposed in 2015 by the EU .

   In this paper the authors will provides also a well-understanding of the contents of agro-tourism and rural tourism with highlighting the new paradigms for the 21th Century. It will also comprise a proposal for an international cross border strategy concerning the rehabilitation of an International Association created in 2000 during the 1th World Forum on Agritourism and Rural Tourism, held in Perugia (Italy) with the name of the International Association of Experts in Rural Tourism and Agriutourism.-IAERT.

   The paper can contribute to generate new knowledge on prerequisites and conditions for developing entrepreneurial capacities of agriculture and tourist sector as well in order to increase the level of utilization of natural resources in all area of the world.

Keywords: *Sustainable Development, Sustainable Tourism, Agritourism, Rural Development, Farm Multifunctionality.*

THE QUALITY OF MANAGEMENT IN THE PRODUCT DEVELOPMENT

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ABSTRACT

In the literature of the automotive industry, the development of a product, from idea to entry in the serial production, it is made according to a standard model PDP/PEP, The model itself being described by VDA (German Association of the Automotive Industry): PDP = product definition process PEP = product development process. However, this model has been taken over by the entire automotive industry, including the asian region. For facilitate cooperation between the manufacturer and the customer throughout the development process, it has imposed a division standardized PEP area in eight distinct phases, each with standard criteria for the conclusion and entry into next phase. Although the PDP / PEP model is itself a project management tool, the major criteria in its follow-up are quality and secondary business criteria.

Complex system manufacturers often use a product development strategy based on two levels of design - platform and application. This strategy is very effective for large volume manufacturers but also under a multitude of benchmarks. Given the complexity of the number of parts to carry out a complete design for each item would generate high costs and unreasonable as part of the internal components (those that provide system functionality in question but not in contact with interfaces that will be installed it) can be used for many parts, thus forming a number of platforms, for example the shafts platform, the actuator platform, t he bearing platform, etc The design engineers within a platform will work on continuously generating new, improved technical solutions, independent of the direct demands of automotive manufacturers. Alongside this, application engineers choose optimal set of components provided by each platform to build these systems to meet closer to the requirements of each specification.

The methodology and recommendations presented in this paper are consistent with general industrial practice, but especially with the automotive industry, based on and respecting its specific standard - ISO / TS 16949, as well as the methods recommended by the German Automobile Industry Association - VDA .

The concrete case study used to explain the use of statistical methods that control processes is based on a real industrial process, and data sets are also real, coming from everyday practice

KEYWORDS: quality management, project, product development

THE IDENTIFYING QUALITY OBJECTIVES AS THE STAGE IN QUALITY PLANNING OF THE PROJECTS

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ABSTRACT

Within each major process of quality management in projects, quality objectives are derived from the strategic quality objective of the project. The project's strategic quality objective must identify the project's objectives, the project's purpose, the project's results. Quality planning is only made after the strategic quality objective has been set, an abstract can not be planned.

Planning will be the development of products and processes necessary to achieve those objectives. The setting of the strategic quality objective and the quality objectives deriving from it is considered as the first step in project quality planning. Many projects take place in organizations. Within organizations, a team of people who perform one or more functions in the organization is set up for project management. These persons are usually characterized by a high level of productivity, capable of solving tasks in emergency and strive to start and complete the work in good conditions. This often leads to the mistake of skipping the quality planning stage, and first of all to easily move beyond the stage of setting the strategic quality objective of the project and the realization of this objective, directly starting the project. There is a risk of failure of the project, activities to be restored, rewriting of documents, correction of mistakes, replies to complaints, the emergence of new activities.

It is therefore clear that the problems that have arisen have been planned as such. People who set quality objectives of the project were not malicious or with deficiencies, on the contrary, the people are experienced, committed, but without experience in " the quality of management".

It is further noted that the establishment of the strategic quality objective and the objectives deriving from it was made before the physical initiation of the project. From practice, it was found that a project did not evolve in line with the initial planning, as I put forward, "we ourselves planned our problems". Such planning function of quality must remain present throughout the project life cycle, taking into account the issues raised, reconfigures the framework of the project. Such changes will lead to new quality objectives, which it will also be changed, thus representing a mobile target identifying new quality objectives.

KEYWORDS: quality objectives, projects, quality planning

ENVIRONMENT MANAGEMENT IN BRASOV'S INDUSTRIAL ORGANIZATIONS: REALITIES AND REQUESTS

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Abstract
The purpose of this paper is to highlight the fact that industrial organizations operating in the national economic environment will not be able to survive without managing efficiently and effectively (plus: under strict control) the environmental issues.
This research was focused mainly on environmental issues in the contemporary world, based on the current state of knowledge in this challenging field.
My main goal was the analysis of the environmental management system stipulations in accordance to the ISO 14001 standard implementation and also the presentation of the environmental performance's management and its high importance in the industrial organizations.

SUSTAINABLE DEVELOPMENT CHALLENGES TO BUSINESS ADMINISTRATION OF ROMANIA

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Abstract

An offspring of the general concept of sustainability, beyond conformity, Corporate Social Responsibility (CSR) supposes, for the enterprise, coherent and complex initiatives oriented towards three dimensions (economic, ecological and social), which determine an equal and simultaneous effect on the attaining of the corporate economic, ecological and social objectives.
CSR relies on the idea according to which the level of the overall performance of a company is given by the way a firm contributes to economic prosperity, environmental quality and social capital.
Our scientific argument in the realization of this article is supported by the fact that CSR comprises a large array of actions, in answer to the effects of climate change – environmental pollution, health, human rights, efficient use of alternative resources and energies, eco-efficiency – objectives that have not yet been fully integrated in the policy of the Romanian enterprises.
This paper aims several CSR management models, which can be integrated in Romanian firms to a sustainable development in the average/long run, which can eliminate the deficiency of the isolate approach of a single dimension of the CSR, allowing for synergic initiatives of the organization, which can trigger the optimization and adaptation of one dimension to the other two conditions and, moreover, interactions between them.

Keywords: sustainable development paradigm, Corporate Social Responsibility management models, enterprise policy

Classification JEL: I24, R15

THE ANALYSIS OF THE TOURISM DEVELOPMENT OPPORTUNITIES AT A EUROPEAN LEVEL BASED ON SPECIFIC INDICATORS

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Abstract

Tourism plays an important role in the E.U. because of its economic and employment potential, and because of its social and environmental implications. The statistics regarding tourism are not only used to monitor the E.U. tourism policies but also the E.U. regional policy and the sustainable development policy. In terms of infrastructure and tourist units, the European space offers multiple possibilities. In light of these possibilities there were created many jobs both in areas directly dependent on tourism and travel agencies, and in the adjacent ones. By this we understand the development of the catering services. Romania, compared with the total average of the European Union does not have many facilities in the tourism sector. However, Romania has a great tourism potential, which unfortunately is not exploited. From this perspective, this article aims to process data obtained from the official statistical publications of the E.U. In this context this paper considers using some simple (elementary) characterization of tourism (catering) as: the graphical method, the classification method, the method of structural changes and simple methods of processing the tourist activity macroeconomic indicators. The analysis of the indicators will be presented in this article independently and in conjunction with the influence factors.

Keywords: tourism activity, macroeconomic indicators, correlation and regression method, catering services

FOOD TOURISM AND SUSTAINABLE DEVELOPMENT

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Abstract

Tourism and local gastronomy, sustainability and local economic development, costs and benefits of responsible tourism, represents the objectives and strategic priorities to all stakeholders in the field of economic efficiency, social responsibility and environmental quality. The contribution of food tourism to development and preserving local identity, traditions and cultural values in the new context of regeneration development of rural communities by agriculture and tourism, represent major viewpoints that emphasize the importance for research, analysis and identification of best practice models.

Based on these considerations, this research paper outlines the current state of food tourism development at local and regional level by identifying the factors that contribute to boosting local production and the correlations between gastronomy and sustainable development of tourism destinations. The results of the conducted research highlights the links between gastronomic tourism based on sustainable local economy, increasing expenditure by tourists at destinations, reduced seasonality and increased efficiency and competitiveness of the local companies.

Keywords: *Food tourism, Sustainable development, Responsible tourism*

JEL Classification: Q01, Q56

EVOLUTION OF THE WORLD AIR TRAFFIC ESTIMATED BY 2020

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Abstract:

Flying is one of the most regulated sectors of the global economy. Political, technical and economic defining their implications are such that this activity, the extent and spread their domino effects involves covering the entire planetary existence.

In each of the member states of the main international organizations it was created national specialized framework for the regulation of air transport, the state of taking part in all stages of development, and is therefore considered the most power market aviation industry and air transport.

My work focuses on the fact that the creation of alliances in air transport is a response to the need to streamline business airlines that face a multitude of problems related to costs, restrictive policies on access to certain markets, regulations protectionist in many airports and decreasing air traffic due to political conflicts.

EXPLORING THE ROLE OF ALLIANCES, AGREEMENTS AND PARTNERSHIPS IN THE AIRLINE INDUSTRY; THE CASE OF APG NETWORK WITHIN THE ROMANIAN MARKET

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Abstract

During the last years, the airline industry had a dynamic evolution, due to significant changes such as: the liberalization of air traffic with two important consequences, the development of the hub and spoke model, as well as the emergence of low-cost companies; the commercialization and privatization of airports; the evolution of technology.

In order to be competitive in this new context, taking part of an alliance or network, creating a partnership or an agreement became a key strategy for airlines and as well as other stakeholders involved. This article examines the different partnerships in the airline industry, starting from code-share agreements between airlines or the emergence of airline alliances as a consequence of the hub and spoke system up to the more recent airline-airports partnerships, code-share agreements involving low-cost companies or airline representation agreements for several (new) markets.

The case study of APG Network will be examined, in order to emphasize the role of GSAs (General Sales Agents) in the development strategy of airlines. Moreover, a survey was conducted among travel agencies and airlines operating in Romania, to identify their perception on APG and its impact on the Romanian market.

Keywords: airline alliances, GSA, airline representation, network, APG.

SUSTAINABLE URBAN LANDSCAPING
FOR STREET CORRIDORS IN MODERN CITIES
(CASE STUDY: BRITISH EXPERIENCE)

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Abstract

The concept of sustainability has exceed the environmental level to the applied urban level where serious attempts to incorporate the concept of sustainability at all levels of urban planning, that didn't take into consideration the social, economic, environmental requirements that are the basic elements of sustainability.

In this research, we will insert the concept of designing sustainable urban landscaping because of its importance in Modern cities, and explaining the applied Categories especially on the "CORRIDORS" level because they connect & form the natural scene of the streets where the urban& natural elements are located next to each other.

The research deals with the analysis of the British experience about the role of Corridors in Sustainable Urban Landscaping in urban areas & cities that are different in their nature & topography, and draws a set of indicators that can be adopted to coordinate Sustainable Urban Landscaping in cities & urban areas.

CORRELATION BETWEEN LAND USE AND ECOSYSTEMS IN MODERN DEVELOPMENT CITIES, PLANNING FOR SUSTAINABLE FUNCTIONAL CITY.

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Abstract

Natural and Semi-Natural ecosystems in the city, are part of landscape patterns in the city, which are supposed to be taken in consideration in planning cities. How much are modern cities take that in their plans, by the call for sustainable cities, we have to work on integrated analysis of landscape functions and values, by making the landscape element is the central element in the process of planning and management and explain how it provides goods and services to raise the value of human life.

This study will divide the importance of ecosystems in three types: ecological, socio cultural and economic values, define each value and explain reflection on human as goods and services.

We aim to achieve more sustainable use of our landscape and conserve natural resources, by integrating ecological sustainability goals in economic theory and models, by using cost benefits in project evaluation to determine negative and positive effects on the landscape and associated communities especially in land use plans.

The city of Prague will be good example of modern development city, with its landscape elements (open spaces) and master plan, how close it is in thinking of ecosystems in conservation and management.

Keywords: *Landscape functions; Ecosystem goods and services; Ecological and economic valuation, city of Prague.*

THE IMPORTANCE OF DELIMITING THE RIGHT SCENARIO IN AN INTERNATIONAL BUSINESS ENVIRONMENT

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Abstract

The new competence has spread out of the traditional markets and this leads to some people achieve a great success in business, while others remain asking themselves what has happened. The "internet era" has changed the business and life's framework a long time ago. But is right now when the so-called "digital natives" became the new consumers. In the ground of oligopolies competition, it is usual that big companies tries to protect their market quota against their competitors: both the ones that are stablished and those emerging with new firms. Then, the importance of state properly the scenario of this competition is a key factor. In this paper the industry of communication, particularly the sector of TV Series and Programs. The immediacy is in the core of the business, since the preferences of consumers changes quickly. On the other hand, the competitors are usually focused on some goods of services, but, the real innovations come from an unexpected way. Some cases of successful companies are analyzed and results shown that all of them have a common point: The audacity to foresee the correct scenario and to focus properly where the real competitors are located. What are truly substitute products?: Where and what are those products by which are so attractive that even the most loyal customers could leave a company and drive their purchases to another firm. This firm would probably be not in the same sector and, therefore, only those more advanced entrepreneurs have been able to see. The price is the success.

Keywords: legal framework, global business, competition.

EUROPEAN CULTURAL ROUTES, PREMISES FOR DEVELOPING SUSTAINABLE CULTURAL TOURISM

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Abstract

Tourism as one of the major country's economic force requires the implementation of sustainable concept to its strategy and operation for long term success. Sustainable development of cultural tourism includes socio-cultural effects of tourism on host community, local public safety, social carrying capacity of the local community, conservation of cultural heritage, safeguarding cultural identity of local community and quality of life in general. Environmental sustainability of cultural tourism succeeds via protection of the natural ecosystem, effective energy, waste and environmental management, water availability and management, wastewater treatment, controlling atmospheric pollution and appropriate management of the visual impact of facilities and infrastructure. Furthermore economic dimension of sustainability is achieved by considering economic benefits of cultural tourism for the host community and destination, sustaining tourist satisfaction, acceptable seasonality of tourism activity, designed cultural routes and cultural facilities, planned proper tourism related transport and efficient institutional regulation. The Cultural Route as envisaged by the Council of Europe represents the conceptual evolution of the academic travels undertaken by scholars via the monasteries of Europe in the Middle Ages, and the Grand Tour, a journey made by the young bourgeoisie and European aristocracy in the eighteenth century to learn about Europe, monuments and artefacts which had to be seen and visited in order to gain an understanding of the foundations of European culture. With the help of Cultural Routes, Europeans can learn and better appreciate their own culture, history and heritage. Cultural Routes are based on a cultural and tourism cooperation, which aims at the development and application of a route or multiple routes. With regard to sustainable and intelligent cultural tourism products, Cultural Routes also take a pioneering role. In their function as instruments for cultural cooperation programs, cultural routes in Europe impact the continental identity and the social cohesion of its communities, and, not least, they set in motion the structures of sustainable cultural tourism and economy

Keywords: cultural tourism, Europe, cultural route, sustainable development, heritage.

COMMODITIES IN THE CONTEXT OF ECONOMY BASED ON SUSTAINABLE DEVELOPMENT IN ROMANIA

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Abstract

The products and services that carry the insignia of the ecolabel can keep throughout its stage from the phase of material or concept until they are consumed, the conditions required to be fulfilled by them, being associated with an unpolluted environment. Commodities which pours its protected merits on product quality and thus on human health are increasingly more found on the market, in household consumption, but also in the specialty literature and statistics showing the decisive role of this category of goods on sustainable development .

Commodities have becomem, among other elements, a basic component of the "bio-economy" which as EU stated represents an economy using biological resources from land and sea, and also wastes as raw materials for food, for feed animals and for industrial energy production. It also includes ecological processes for sustainable industries.

Within the broader concept of green economy, bio-economy based on knowledge is focused on complete and complex capitalizing renewable natural resources by applying the results of research, development and innovation in sectors such as food, animal feed, pulp and paper, biofuels (Clever Consult, 2010 and KBBE, 2014).

Bio-economy is that kind of economy that produces and processes the biological resources of (agricultural) land and aquatic ecosystems, and includes agriculture, forestry, fisheries, aquaculture, food processing, pulp and paper, and part of the chemical industry, biotech and energy, so is the economy of the future and thus an economy where environmental goods, whether products or services, will be the main objects of market transactions, with clearly defined purpose, namely sustainable development

When referring to our country, we can say that organic products made in Romania are mainly exported, being appreciated on the markets where arrive. Romania's population, given the standard of living and income levels, do not consume organic foods or ecological services as much as the population of developed countries, but the possibilities to produce such goods are high. For example for Romania, bio-economy, where environmental goods afre produced is a very important sector in terms of employment. According to the Statistical Yearbook of Romania, the majority of the working population is found especially in bioeconomy sectors of agriculture, food industry, industries and services associated to human health.

The share of areas under organic crops in utilized agriculture area (Share of organic crop areas in the utilised agricultural area) in Romania has increased from year to year from 0.8% of the total cultivated area in 2006 to 2.2% in 2014. In 2015, these areas represented 1.8%, also due to the total cultivated area to which it relates.

The consumption of organic products in Romania reaches more than 0.5% of total food sales, while in Austria and Germany the rate is 7-8%, according to data provided by BIO Republic online store that sells exclusively green products.

The bio-economy included in the programs of European funding, POC, among the areas of smart specialization is characterized as it follows: "The area benefits from the huge potential of Romanian agriculture in the context of an local food industry growing active and standards rising, of research successful applications in the field and in the pharmaceutical industry, and in the context of global trends as the increased demand for food. The safety and optimizing food products, development of horticultural sectors, forestry, animal husbandry and fisheries or exploitation of biomass and biofuels are subdomains with clear potential."

We proposed in this paper to analyze the number and evolution of organic products labels made in Romania but also those sold in Romania compared to EU countries.

Given the essential role they have products and services that are ecolabeled on sustainable development it should be promoted the concept of agriculture and organic production to consumer awareness of product benefits and ecological services so that they be willing to offer a higher price for such goods whose quality is guaranteed by a system of inspection and certification.

Bibiography

1. Brandabur, Raluca Ecaterina, and Laura Daniela Tănase. "A different type of consumer: Study on organic products " *J. Online Mark* 4 (2010): 54-61.
2. Dinu, Vasile, Ion Schileru, and Anca Atanase. "Attitude of Romanian consumers related to products' ecological labelling." *Economic* **Amphitheate**r 14.31 (2012): 5-6.
3. Lupu, Nicolae, Mihail Ovidiu Tanase, and Remus-Alexandru Tontoroiu. "A straightforward x-ray on applying The Ecolabel to the hotel business area." *Economic Amphitheater* 15 (2013): 634
4. http://legestart.ro/strategia-comisiei-europene-pentru-o-bioeconomie-durabila/
5. http://www.marketwatch.ro/articol/13425/Bio-economia__oportunitati_si_perspective_pentru_Romania
6. http://www.marketwatch.ro/articol/14787/Bioeconomia__o_sansa_pentru_Romania

PROFITABILITY IN TOURISM – A TOPICAL CONCEPT

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Abstract

The purpose of the research is to highlight the fact that even in tourism business profitability is the main motivation. Recently included among the consumption needs of the modern man, measured as an indicator of the quality of life, tourism deserves the importance attached to it today by the culture people from all fields of knowledge. Tourism is an economic and social phenomenon of the modern civilization, rooted in society, and as such it is in a relationship of interdependence with it.

The research on tourism phenomenon integrates a broad thematic area, from defining its place in the development strategy to highlighting the determinants, the development fluctuations and the manifestation forms of coordinates and market mechanisms and evaluating its impact on economic, social, cultural, environmental and political area.

Profitability is an important quality synthetic indicator, even in tourism business, which expresses the ability of a company to obtain net income. Profitability reflects the margin of income that exceeds expenses, and in relative expression it must always appear over-unit. This is very true in tourism business also

Keywords: profitability, Romanian tourism, profitability forms.

Classification JEL: L83

KEEPING THE ENVIRONMENT IN TERMS OF THE SUSTAINABLE
DEVELOPMENT OF THE ROMANIAN TOURISM

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Abstract

   The general policy, globally, to achieve the environmental tourist saturation, natural, social, cultural, must take place at national, regional, local level and the laws and regulations set forth in the main government bodies must ensure the preservation of the quality of the environment in the interest of tourists, of the local communities, in accordance with national objectives. Therefore, the following objectives must be taken into account such as: outlining the global theoretical potential tourism, on long term, in relationship with the existing national and regional resources; setting the type of tourist product or image that you want to be performed; the examination of the level of demand for a particular tourist product; estimation of useful material conditions to achieve appropriate reception capacity, in relation to the existing transport network, the volume of investments required; the definition of the dimensions of the socio-economic, cultural and ecological impact of the environment of any kind.
   A set of complex rules underlies the impact measurements, variable in space and time, meant to direct the development of an optimum level of any tourist areas.

Keywords: tourism activity, impact, environment

Classification JEL: L83

INVESTMENT OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT

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Abstract

The purpose of this study is to examine investments in rebuilding ecosystems and sustainable creation of new industries that will bring jobs and long-term direct benefits.

If we analyze the material and energy flows of natural capital and economic infrastructure we find that the production process is a process of transforming resources into products, services, waste, through labor, fixed capital.

Increasing production of goods and services is driven by population growth satisfying consumer needs.

In the framework of sustainable development, human resource training is a prerequisite, and the education system must prepare human resources to manage sustainable economy.

Human resource is a precondition in the transition to new sustainable industries.

Keywords: investment, reconstruction, human resources, economic growth, economic circuit

INDUSTRIAL DEVELOPMENT IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

The purpose of this study is to examine the training and multiplication effects of industrial development sustainable.

The relationship industry-environment is fundamental to the issues and problems of sustainable development.

Restructuring industry can be accomplished faster in a restricted delimitation based on the concept of macroeconomic unit causing investments for a good industrial development.

Formation and development of a sustainable industry require maintaining the heritage of natural resources to appropriate standards by eliminating degradation of its activity, by reducing and canceling the harmful effects produced by other economic activities.

The point of concentration and size of sustainability efforts depend on local conditions including resources, political action and individual features of the community.

A sustainable development can not be done through waste.

Keywords: strategy, sustainability, development, economy, resources

SESSION 3
FINANCING AND ACCOUNTING
FOR SUSTAINABLE DEVELOPMENT

EXPANSION OF THE LIFE INSURANCE MARKET IN EUROPE – A SPATIAL APPROACH

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Abstract

The aim of the present study is to underline the development of the life insurance market between the decade-long period of 2004 – 2014, by viewing side-to-side the differences and the similarities between the two years. The focus is being put on the penetration rate of the life insurance for the twenty-eight European Union members. Using techniques specific to the spatial statistics, this differences were emphasized through the quantile maps and the existence of spatial autocorrelation, which presents an accurate picture of the presence of the insurance market on different European regions.

Keywords: *life insurance, penetration rate, spatial statistics, developement, maps.*

***Classification JEL:** G22, C21.*

1. INTRODUCTION AND LITERATURE REVIEW

Insurance seem to play a key role in sustainability issues in European countries. The authors propose to use life insurance penetration in terms of spatial statistics methods. This paper started from the assumption that life insurance penetration is the most used proxy from insurance development in line with Outreville, (1996); Alhassan and Fiador (2014), Olayungbo and Akinlo, (2016), Armean and Muresan (2017) etc.

2. DATA AND METHODOLOGY

We use data from two non-consecuive years (2004 and 2014) of the Insurance Europe and St. Louis Fed for the twenty-eight European Union members. The analysis was performed with *Thematic Mapping* project and *GeoDa v.1.8* software.

3. RESULTS

In this part of paper we offer a selection of our results:

3.1. Descriptive statistics

Table 1. Descriptive statistics of life insurance penetration rate

Statistic	2004	2014
Mean	3.024	3.151
Median	2.450	2.200
Standard deviation	2.462	2.507
Skewness	0.703	0.777
Kurtosis	-0.342	-0.477
Minimum	0.100	0.200
Maximum	9.200	9.100
Range	9.100	8.900

Source: own computations

The mean of the sample for the year 2004 was slightly lower than for the year 2014. In the decade-long period the mean raised from a value of 3.024 to a level of 3.151. However, the median decreased from 2.45 to 2.2, while the standard deviation increased. The skewness is positive in both cases, as it is reflected by the positive levels of 0.703 and 0.777, respectively, of the skewness coefficient. In the meantime, the values obtained for the kurtosis coefficient underline the existence of a more platikurtic-oriented distribution.

3.2. Maps for life insurance penetration

In order to discover possible outliers two analyses are applied and their results are summarized by the *Figure 1a* and *1b*.
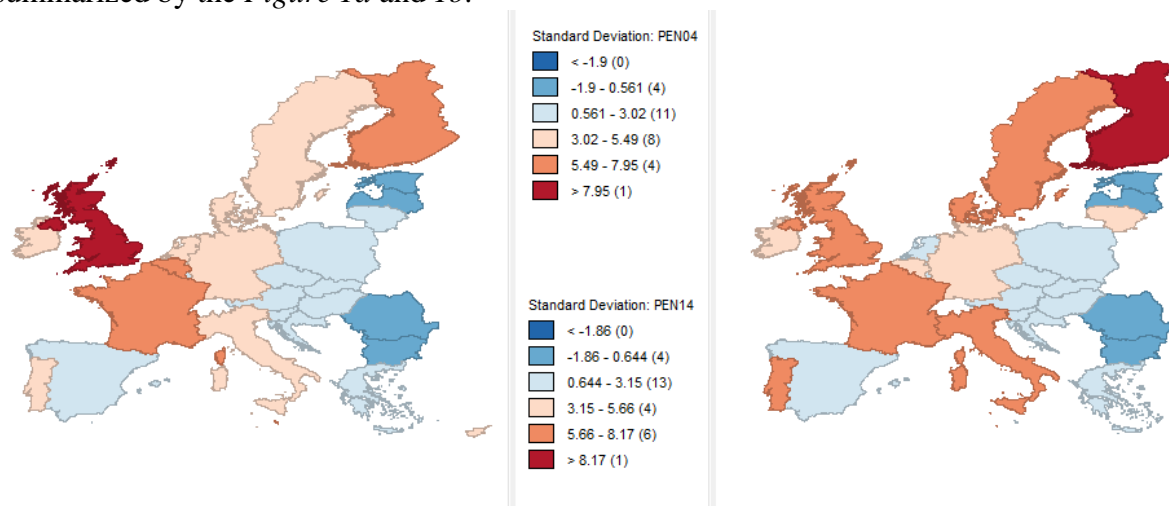
Fig. 1a Life insurance penetration rate for 2004   **Fig 2b** Life insurance penetration rate for 2014
Figure 1: Quantile maps of the Life insurance penetration rate
Source: own construction in GeoDa

As it can be seen by examining the left side of the *Figure 1* the United Kingdom represents the only outlier for the year 2004, having the highest value for the Life insurance penetration rate. However, it can be seen that for the year 2014, the United

Kingdom is not an outlier anymore. The right side of the *Figure 1* underlines the fact that Finland became the only remaining outlier in case of the penetration rate.

3.3. Global autocorrelation results

The Moran I statistic presents a value of 0.0664342 for the penetration rate of 2004 and 0.0126481 for 2014. Our results show a global autocorrelation exists.
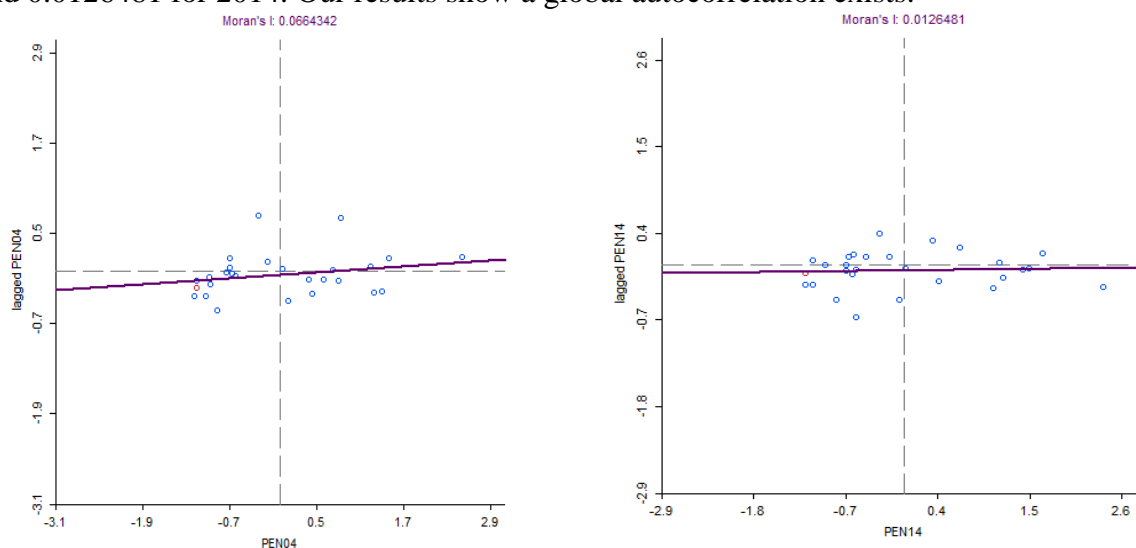
Figure 2: Results for Morgan I
Source: own construction in GeoDa

3.4. The Conditional Plot Map

The Conditional Plot Map displayed in the *Figure 3* reunites both years under the same spatial statistical analysis.
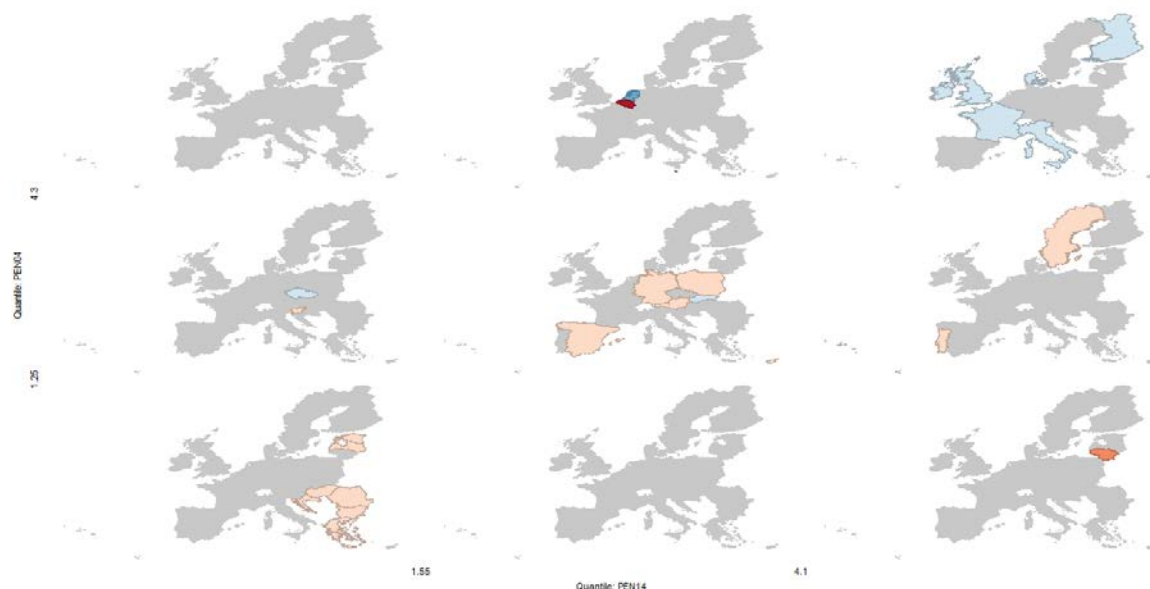
Figure 3: The Conditional Plot Map
Source: own construction in GeoDa

The countries on the maps from the first row present the highest penetration rates for the year 2004, while the bottom row presents the lowest penetration rates for the same year. Meanwhile, the first column presents the countries with the lowest value for the penetration rate in 2014, while the last column presents the countries with the highest penetration rates for the year 2014.

Therefore, the second map (from left to right, top to bottom) reunites the countries that scored medium levels for the penetration rate in 2014, but high values a decade before. It is comprised by Belgium, Malta and the Netherlands. The third map reunites Denmark, Finland, France, Ireland, Italy and the United Kingdom, countries that presented the highest levels of the variable for both years.

On the second row we find the Czech Republic and Slovenia, as the country cluster that presented medium values of the penetration rate in 2004, but decreased by 2014, scoring lower values than previously. Austria, Cyprus, Germany, Luxembourg, Poland, Slovakia and Spain presented medium values in both 2004 and 2014. Finally, Finland and Portugal rose in 2014 to a higher level than the one registered in 2004, when their respective penetration rate was a medium one. Both Balkan and Baltic regions remained in the category with the lowest Life insurance penetration rates in 2004 and 2014, all with the exception of Lithuania. The latter became the only country that raised its rate for this indicator form a low level to one of the highest (in 2014) in Europe.

4. CONCLUSIONS

This paper presents preliminary results of some aspects of insurance development. Our maps capture a real picture of life insurance market and highlight the importance of the insurance sector in the economic sustainability.

ACKNOWLEDGEMENT

REFERENCES
[1.]   Alhassan, A. L., and Fiador, V. (2014). "Insurance-growth nexus in Ghana: An autoregressive distributed lag bounds co-integration approach", *Review of Development Finance*, 4, 83–96. doi:10.1016/j.rdf.2014.05.003.

[2.]   Armean, G., and Muresan, G.M. "Insurance Market Development Before And After The Financial Crisis In The Context Of Ethics And Corruption." Annals-Economy Series 1 (2017): 191-198.

[3.]   Olayungbo, D. O., and Akinlo, A. E. (2016). "Insurance penetration and economic growth in Africa: Dynamic effects analysis using Bayesian TVP-VAR approach", *Cogent Economics and Finance*, 4(1), 1150390. https://doi.org/10.1080/23322039.2016.1150390.

[4.]   Outreville, J.F. (1996). "Life insurance markets in developing countries", *Journal of Risk and Insurance*, 63(2), 263–278

PROFITABILITY IN PERFORMANCE – A RELATIVE AND CONTROVERSIAL TERM

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Abstract
The main objective of this approach is to treat the performance by one of the determining indicators, that is the profitability at the enterprise level. In order to characterize a company from the profitability point of view, we consider that three aspects should be taken into consideration: the activity evolution- its increasing, the decreasing of the activity, the evolution of the turnover, the evolution of the Value Added Tax, the evolution of the profitability itself- profit, profitability rates, as indicators. In order to review the literature in the field, we used the quality research with a descriptive-conceptual perspective of a fundamental type, according to the deductive method, starting from concepts and theories existing at the level of knowledge based economy and the accounting used in this new economy. The observation method is also used throughout this scientific approach, first appealing to its non-participating character, by exposing researchers' various opinions , and then to its participating character, by drawing some conclusions related to the presented approaches.

Keywords: *profitability, return, performance, efficiency, risk*

Classification JEL: *D83, L25, P17*

1. INTRODUCTION

No matter of the company objectives, it will not be achieved unless it meets two major financial restrictions: *profitability* (return), or company's ability to obtain a monetary surplus that allows him to face commitments and to ensure her development; *financial stability*, which generally expresses company's characteristic to harmonize resources and the use affected for this resources.

Profitability can be defined as the ability of a company to make profits by using inputs and capital, regardless of their origin. Profitability is strongly related to the entrepreneur professionalism, with time, with material and financial resources invested in an economic activity. Ensuring the sustainable development of a company involves carrying out a profitable activity. In fact, the ensuring of company's performance is under impact of the relation between efficiency and effectiveness, emphasizing a monetary evaluation of performance. This monetary view may seem insufficient, because, at first

glance, minimizies the enterprise achievements which does not receive a monetary expression (physical productivity, staff skills, social climate, relations with the competitors). In fact, a systemic approach of the company enables understanding the conversion of any favorable achievement (expressed in quantitative or qualitative terms) in monetary results and so in return (profitability).

2. PAPER BODY

Any enterprise must ensure the remuneration and the renewal of the invested assets and this can be accomplished only in the conditions of sufficient profitability of its activity. Profitability always assumes some risks: nothing is certain in an enterprise activity and the most conclusive example in this connection is represented by the economic risk. A systemic approach of the enterprise allows the understanding of the conversion of any favorable accomplishment expressed in quantitative or qualitative terms in the monetary results and thus in profitability.

Profitability is a form of economic efficiency which highlights the financial results of an enterprise. As a general approach, efficiency is defined as the direct or indirect report between the useful achieved effects and the effort made:

$$Efficiency = \frac{Effect}{Effort} \quad or \quad \frac{Effort}{Effect}$$

Efficiency is found in many forms, depending on the activity which is carried out and the results which are obtained, thus being outlined the following forms of efficiency:
- *Productivity* – when determining the efficiency of using human resources ;
- *Profitability* – case when the capacity of making profit is assessed ;
- *Efficiency* – the decisive factor being the efficiency of using assets .

The economic growth of a company generates obligations which it will not be able to cope with unless it emits a flow of results, meaning abundant profitability. The profitability summarizes the quality of the conducted activities at every stage, at all levels; it synthesizes the productivity of factors of production consumption, the performance of all developed activities. Maximizing profitability is the aim of any capital holder, the goal of the entire activity taking place in a market economy. Profitability provides resources for both developing the respective economic activities and for increasing personal and public consumption.

3. CONCLUSIONS

Regarding this scientific step, we can conclude that we have approached a complex theme, contemporary to global economy, and that is the profitability in performance of the economic entities, treated from the view of defining this concept, of the way of approaching it, of the different forms of its manifestation. The aim of this approach is to clarify the notion of profitability in performance; we can conclude from this approach that performance must not be regarded only from the economic and financial point of view, but

it is neccessary to include the aspects related to the environmental and social factors as well. We cannot discuss about performance without taking into account these two essential factors in current market conditions. The profitability term bears a relative character, the ability of emitting monetary results cannot be judged independently of the engaged means in order to achieve them. Thus, the profitability analysis is not limited only to the investigation of its absolute indicators, but also of the relative ones, attained by reporting the results to the engaged or consumed means for conducting the concerned activity.

REFERENCES

Albu N., Albu C. – *Instrumente de management al performanţei*, Volumul II, Editura Economică, Bucureşti, 2003;

Bărbulescu C. – *Pilotajul performant al întreprinderii,* Editura Economică, Bucureşti, 2000;

Jianu I. – *Evaluarea, prezentarea şi analiza performanţei întreprinderii*, Editura Ceccar, Bucureşti, 2007;

Marois B., Bompoint P. – *Gouvernement d'entreprise et communication financiere*, Economica, Paris, 2004;

Martin J.D., Petty J.W. – *Value based management*, Harvard Business School Press, Boston, 2000

Matiş D., Pop. A. – *Contabilitate financiară,* Editura Alma Mater, Cluj-Napoca, 2007*;*

Minu M. – *Contabilitatea ca instrument de putere*, Editura Economică, Bucureşti, 2002;

Niculescu M. (2003) – *Diagnostic global strategic*, Editura Economică, Bucureşti, 2003;

Gschwandtner A., Hirsch S. – *What drives firm profitability? A comparison of the US and EU food processing industry*, 2016, disponibila
ftp://ftp.repec.org/opt/ReDIF/RePEc/ukc/ukcedp/1612.pdf

IS ACCOUNTING-TAXATION RELATION A CONTRIBUTOR TO THE SUSTAINABILITY?

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Abstract

The interdependence between accounting and taxation is a much debated issue that highlights the degree of connection or disconnection between the two areas. This paper brings to the fore the relation between accounting and taxation in the context of sustainability. Both accounting and taxation are two areas that target the performance of the organizations, which are an important factor both for the economy and for society, but also for the environment. In Romania, most of the taxes are established based on the accounting results, therefore the interdependence between accounting and taxation can influence the professional judgment of the professionals and the level of revenues collected from the taxpayers. So the scope of the paper is to analyze if the relation between accounting and taxation is or not a contributor to the sustainability.

Keywords: accounting, taxation, relation, sustainability

Classification JEL: H20, M41, Q01

1. INTRODUCTION

Sustainable development is an important issue discussed and analyzed all over the world. The increasing needs of humans and the limitations of the resources are subjects of debate for the development of a country.

The economic growth, environmental protection and social equity are the components of the sustainable development which must be maximized to increase the development of a country.

The three components can be influence by a series of factors such as the decisions of the governments, of the private companies, the harmony between people, the natural wealth of each country, economical possibilities, etc.

The aim of this paper is to respond to the question "Is accounting-taxation relation a contributor to the sustainability?" and to analyze if accounting and taxation and the relation between them are domains that can influence also the three components of the sustainability.

The research methodology used is the analysis of the official and unofficial documents. The legislation of the two domains will be analyzed to determine the influence of the two over the three dimensions of the sustainability. It will be analyzed also the articles and publications of the researchers from this area.

2. CONTENTS

Between the three dimensions of the sustainable development must be an interaction for the good functioning of these. If the economic growth is fulfilled, the environmental performance is also fulfilled and vice versa. Having the environmental elements at the highest quality, the performance of them will increase, increasing also the efficiency in economy. Having the two dimensions at a higher level, the social equity will also increase.

The companies are important elements for the economy. The performance of the companies is a target of the accounting but also of the taxation.

As we can see from the Fiscal Code, the aim of the taxation is to establish, compute and collect the taxes and fees from the taxpayers. The amounts collected are the state revenues. These revenues are the public money based on which a country can improve the environment in which an individual lives.

On the other hand, as we can see from the accounting regulations, the aim of the accounting is to present a real and transparent image of a company activity. All the transactions of a company are registered based on the supporting documents and the information is gathered in the annual financial statements, which present the performance and the position of the company.

Thus, the two domains have different objectives, but in Romania they are interdependent because the fiscal result is computed based on the accounting result for the majority of the taxes, as it can be seen from the legislation. The profit tax is computed based on the accounting result, from which we must deduct the nontaxable revenues and add the non-deductible expenses to optain the fiscal result. Also, for the microenterprises, the income tax is computed based on all revenues of the company, from which are deducted some revenues such as the one registered in accounting register as trade discounts granted after invoicing and are added some elements such as the one registered in accounting register as trade discounts received after invoicing.

The financial information, presented in the annual financial statements, is important for financial analyzes made by the users of the annual financial statements. So, it is important that the companies present the reality of the transactions made. Based on these analyzes the users can see the performance of a company. The higher the performance, the higher the investments or the employment are. Thus, the accounting is a contributor to the sustainable development.

One of the users of the financial information is the state. The taxes collected as revenues are important for the economic growth, for the environmental performance and the social equity. Thus, the taxation is also a contributor to the sustainable development.

3. CONCLUSIONS

As we could see above, each of the two domains are contributors to the sustainable development and both of them are interdependent. Thus, the relation between accounting and taxation is also a contributor to the sustainable development.

If the accounting results are presented at their real values, and they are high, the fiscal results can also be high, but this depends on the fiscal elements that are added or

deducted from the accounting results. The higher the fiscal results, the higher the taxes are, so the fiscal revenues are higher, improving in this way the economic performance and also the environmental and social performance.

REFERENCES

1.   Bran, F., Radulescu, C.V., Ioan, I., Measures *of Environmental Performance,* Review of International Comparative Management Volume 12, Issue 5, 2011

2.   De Paepe, G., Dickinson, B.,   *Tax revenues as a motor for sustainable development*, Development Co-operation Directorate and Centre for Tax Policy and Administration, OECD, 2014

3.   Kee, P., de Haan M.,   *Accounting for Sustainable Development*, Statistical Commission of the Netherlands, 2001

4.   Legea   nr.   227/2015   privind   Codul   fiscal: https://static.anaf.ro/static/10/Anaf/legislatie/Cod_fiscal_norme_09022017.htm

5.   Ordin Nr. 1802/2014 - Partea I pentru aprobarea Reglementărilor contabile privind situațiile financiare anuale individuale și situațiile financiare anuale consolidate: https://static.anaf.ro/static/10/Anaf/legislatie/OMFP_1802_2014.pdf

VIRTUAL CURRENCY – A VIABLE ALTERNATIVE TO THE CLASSICAL CURRENCY?

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Abstract
Throughout the centuries, the currency has been a topic of interest for both academia and the policy makers. During the time, money itself was seen as a common language of individuals of various origins, creating a connection between people and states and helping as an instrument for achieving different economic objectives. The currency in the traditional sense, issued by a central bank, has implied over time various theoretical approaches. Thus, beyond supporters of the right of the state to have a monopoly on currency, some economists have questioned the real possibility of circulation on the market of an alternative, private currency. Starting from the "Denationalization of Money-The Argument Refined: An Analysis of the Theory and Practice of Concurrent Currencies", written by Friedrich August von Hayek and seeing the way virtual currency started to be used in transactions in the last years, one may ask whether bitcoin or litecoin or an altcoin can be a viable alternative to the traditional currency. Based on these considerations, the present work aims at presenting some key aspects of virtual currency in order to analyse its ability to play a serious role on the market in the long-term.

Keywords: *cryptocurrency, bitcoin, competition, markets*

Classification JEL: *M00, B20, E40, K29*

1. INTRODUCTION

The issue of money is new and old at the same time. In antiquity philosophers like Xenophon, Plato and Aristotle tried to decipher essential aspects related to the value, form, function and how the currency flows in the market.

Studies on currency advanced with the times, and economists have refined their theories. Thus, nowadays, economists and not only study beyond the issues concerning the traditional currency, problems concerning the new forms of currencies, such as the virtual one.

The competition between the traditional currency and a potential private currency gave birth to noumerous controversies in the academia world. Starting from Friedrich August von Hayek, who asked: "Why not to allow the competition between currencies, so you no longer need a standard currency, because people will choose the one that is better. So I got to wonder why the competition should be bordered at money of other governments, prohibiting the private initiative to produce money?" (Hayek, 1999: p. 191), one may observe that nowadays, the economic reality responded in an unexpected manner as a considerable number of virtual currencies are used on the market, competing the traditional one and competing each other.

2. VIRTUAL CURRENCY

2.1. Cryptocurrencies – a connection between people?

Cryptocurrencies are defined as „a peer-to-peer version of electronic cash, which allow online payments to be sent directly from one party to another without going through a financial institution" (Cheun, 2015, p. 8).

The recent history has shown that crypto-currency world is one that adapts very quickly to constantly changing economic environment. Thus, the development of the national economies after 2008 involved the application of some conventional methods, but also of some of innovation. Thus, from the desire of supporting the national economy, some communities have sustained the market introduction of certain currencies not supported by central banks and unissued by an authority, thus appearing cryptocurrencies with a slightly nostalgic hint, such as: Deutsche eMark, Ekrona, IsraCoin, SpainCoin, ScotCoin, IrishCoin etc. (The Coin Desk site). Beyond such currencies, the virtual world is prolific, recording a quick creation of different cryptocurrencies, as one may find reading on specialized sites. Bitcointalk Forum shows daily announcements that appear showing the desire of the introduction of new such currencies. Thus the study conducted by Matthias Tarasiewicza and Andrew Newman (2015) emphasized that in the summer of 2014 on this forum was a discussion about the introduction of 1500 currencies of which later came on the market more than 50% (Cheun, 2015).

Some of these currencies have a very short life, others last in the market for several years. It seems that the most popular cryptocurrencies are: bitcoin, litecoin, novacoin, darkcoin, dogecoin, zetacoin etc. Some of the cryptocurrencies were issued in limited quantities, others not. Among those listed above, the most widely used in transactions is bitcoin, as we shall see in the next section.

2.2. Bitcoin – a viable currency?

Bitcoin is a cryptocurrency created by an anonymous entity, named "Satoshi Nakamoto", which in 2008 first introduced the term in a paper. This currency is generated through a process of mining, on the market existing a maximum number of coins that can be achieved, namely 21 million (Rogojanu and Badea, 2015).

Chart no.1. The evolution of the number of bitcoins in circulation

Source: https://blockchain.info/charts/

As can be seen in chart. 1, the maximum number of bitcoins in circulation since 2009 has not yet been reached; nowadays circulate over 16 million of bitcoin. Due to the limited supply of these currency, its supporters emphasize that it is viable and can withstand over time just because it does not generate inflation (Rogojanu and Badea, 2015). In addition, they argue that the anonymity of transactions, the lack of fees or very small fees in transactions with it, the lack of paper work concerning the issuing of bitcoin, the possibility of avoiding the physical form of money, the feeling of freedom are just some of the advantages that helped bitcoin to survive unlike other cryptocurrencies.

Besides the advantages, bitcoin presents a number of disadvantages, which its opponents will highlight whenever the opportunity arises, bringing to the fore, especially the fact that bitcoin can help criminal actions, as happened in the case of Silk Road and the fact that bitcoin volatility is high, as can be seen in chart. 2.

Chart no.2. BTC / USD exchange rate development

Source: http://bitcoincharts.com/charts/
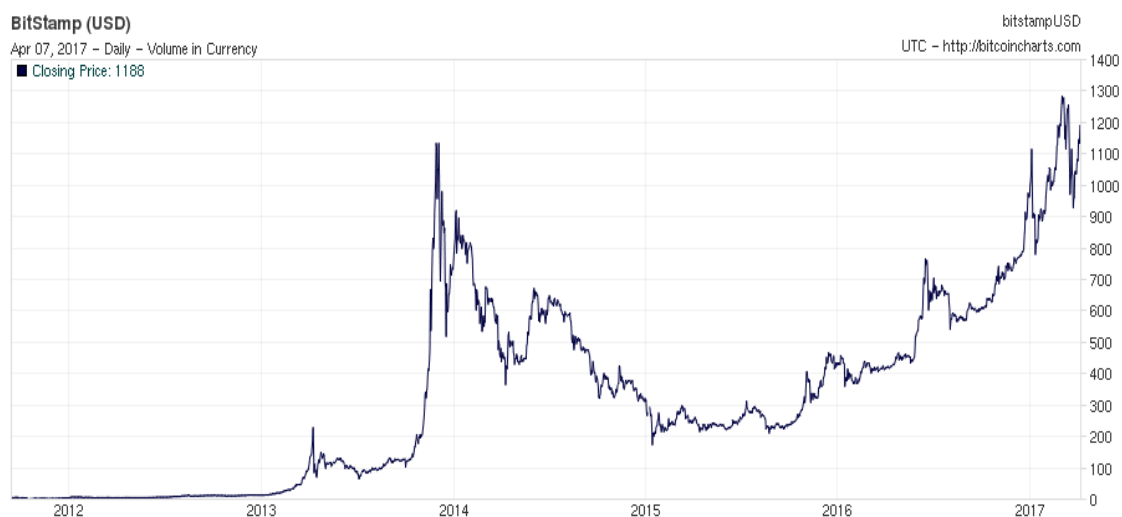
Theoretically, both supporters and opponents have not found yet a widely accepted definition of bitcoin. Thus, the definition of bitcoin as money should start from the generally accepted functions for money. The history of economic thought shows us that even in this respect, over time, economists did not agree on the number of functions that money fulfil. Jevons in his book "Money and the Mechanism of Exchange" from 1875 identifies four fundamental functions for money, namely:

- medium of exchange,
- common measure of value,
- standard of value,
- store of value (Jevons, 2011).

In the current theory of money there are enumerated other functions, such as information function, investment function etc. (Kubát, 2015). Graham (1940) only recognizes two main functions of money: accounting unit and bearer of options. He considers that all the other functions are derived from these primary functions. Based on

these considerations, Kubát (2015) concludes that bitcoins do not qualify to be considered money. Van Alstyne (2014) argues that in order to have value, bitcoin has to be backed by the government. Others argue that bitcoin was turned into an item of speculation more than functioning as money (Cheah and Fry, 2015).

In the current context, it might seem at least strange that a completely virtual "good" might always have a positive price. Dwyer (2015) pointed out that this is the result of a limited availability and unique identification of each Bitcoin. Luther (2016) assumes that bitcoin will maintain an amounted course as long as it will have low transaction costs. Halaburda and Thought (2014) show that in the moment of the appearance on the market, the value of any cryptocurrency is determined by the competition with some other cryptocurrencies, fact that creates volatility in its initial price and then cause specific behaviours of trading it as financial assets.

Some recent studies conducted econometric analysis on the determinants of bitcoin's exchange rates. Kristoufek (2013) for example, studied the impact of the number of bitcoin's searches on Google and the number of daily views on Wikipedia and found that these kind of factors have an influence on the exchange rate of bitcoin. Some researchers suggested that China's stock market index can be a major factor influencing the price of bitcoin. Bouoiyour and Selmi (2015) identified as determinants of the rate of exchange of bitcoin: "Google Search, ratio of exchange-trade volumes, the hash rates and stock market". Polasik et al. (2014) show that a high importance concerning the price of bitcoin is related to the popularity won on the market by bitcoin and the need for trading. Garcia et al. (2014) argue that the lowest value possible for bitcoin might be set on the overall cost of the mining process.

Another issue concerning the transactions with bitcoin is related to the way they are regulated in different countries. For example, Max Kubát shows that under the laws of the Czech Republic, bitcoin does not meet the legal criteria to be classified as money, The Czech Payment Services Act defining electronic money based on four criteria, that bitcoin does not comply with (Kubát, 2015). Moreover, because bitcoin has no physical substance, it can be considered as something intangible according to Czech law or be included in the category of fee stamps of special kind (Kubát, 2015).

The legislation of many countries already took note of the existence and widespread use of bitcoin and that is why some states have decided to tax the transactions made with bitcoin. The problem of the legal classification of bitcoin was and still is a challenge, but beyond that, some countries have realized that they can benefit from the popularity of this currency, lining their budget even from the taxation of transactions with bitcoin (e.g. Germany, Brazil, Canada, Bulgaria etc.). Other states have decided to ban the use of such a currency on their territory (Russia, Ecuador and partly China). Besides that, bitcoin transactions have become popular internationally. Thus, famous sites worldwide accept nowadays the payment for their products in such a currency. For example, Dell accepts bitcoins direct payments, but Amazon instead provides digital gift cards that can be purchased with bitcoins and then used to acquire items on their website (Pieters and Vivanco, 2017).

In Romania, Bitcoin is used without being expressly regulated. There are currently a number of merchants that accept payment in bitcoin for their products or services. Among them one may find: travel agencies (e.g. Vola, Fly-go.ro etc.), stores of various types (PC Garage, F64, AltShop.ro, Computergames.ro etc.), restaurants and hotels (Chaos

Cowork, Famous Place, Caro Hotel, PaulaAna.ro etc.), spas, gyms etc. (Goanadupabitcoin.ro).

3. CONCLUSIONS

Bitcoin's popularity has created gladness among the supporters of the idea of private money and also restlessness for those who see its dangerous potential. To be fair, criminal activities, which were designed to use bitcoin as an instrument, were often mentioned in the press, but the desire to break the law can occur regardless of the name and type of the existing currency.

The fact that over time currencies like bitcoin appeared in the physical or virtual environment and circulated in parallel with the traditional currency, support by the state, shows that individuals have expressed a desire to get out of "the magnifying glass" of the authority or to enjoy freedom. Often, exactly the competition between currencies about whom Hayek wrote, was the one that led to the disappearance of some, the market being the one who succeeded to maintain that currency in which individuals have the greatest trust. In some cases, legislation that banned any form of private currency was the one who ended the parallel circulation of currencies.

It is certain that, unlike other physical or virtual private currencies, bitcoin survived a greater number of years. The question that arises frequently is how much it will last on the market and how much it will still be trusted by people who frequently use cyberspace to carry out transactions. Does the fact that some states have already begun subjecting it to regulation will provide more legitimacy, increasing the trust in using bitcoin or it will lead to lower and eventually to the disappearance of many of the advantages that the use of this currency offers? Starting from this kind of questions and from the reality offered by the markets, one may observe that the issue of private currency, and consequently the issue of bitcoin, remains a real challenge for both scientists and especially for policy makers.

REFERENCES

Bouoiyour, J., Selmi, R., What does Bitcoin look like? *Ann. Econ. Financ*. 16 (2)/2015, pp. 449–492

Cheah E.T. and Fry, J., Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin. *Economics Letters* [e-journal] 130/2015, pp. 32–36, <http://dx.doi.org/10.1016/j.econlet.2015.02.029>[Accesed 01 March 2017]

Cheun, D.L.K. (ed), Handbook of Digital Currency. Bitcoin, Innovation, Financial Instruments, and Big Data. [e-book] Elsevier Inc., 2015 <http://www.sciencedirect.com/science/book/9780128021170> [Accesed 01 March 2017]

Dwyer, G. P., The economics of Bitcoin and similar private digital economies. *Journal of Financial Stability*, April 2015, pp. 81–91.

Garcia, D. et al, The digital traces of bubbles: feedback cycles between socio-economic signals in the Bitcoin economy. *Journal of the Royal Society Interface*, vol. 11, no. 99/2014, http://rsif.royalsocietypublishing.org/content/11/99/20140623

Graham, F.D., The Primary Functions of Money and their Consummation in Monetary Policy. *The American Economic Review*, 30 (1)/1940, pp. 1-16

Halaburda, H., Gandal, N., Competition in the cryptocurrency market. NET Institute Working Paper No. 14-17/ October 2014. Available at http://dx.doi.org/10.2139/ssrn.2506463.

Hayek, F.A., Autobiografie intelectuală. In S. Kresge and L. Wenar (Eds.). Nemira Publishing House. Bucharest, 1999

Jevons, W.S., Money and the Mechanism of Exchange. 2nd issue, Indianopoli: Liberty Fund, ISBN not assigned, 2011.

Kristoufek, L., Bitcoin meets Google Trends and Wikipedia: quantifying the relationship between phenomena of the Internet era, *Sci. Report*. 3 /2013, 3415.

Kubát, M., Virtual currency bitcoin in the scope of money definition and store of value. *Procedia Economics and Finance* 30/2015, pp. 409-416, <http://www.sciencedirect.com/science/article/pii/S2212567115013088>

Luther, W., Cryptocurrencies, Network Effects, and Switching Costs. *Contemporary Economic Policy* 34/2016, pp. 553-571.

Polasik, M. et al., Price Fluctuations and the Use of Bitcoin: An Empirical Inquiry, *International Journal of Electronic Commerce* 20(1)/2015, pp. 9-49, DOI: 10.1080/10864415.2016.1061413

Rogojanu, A. and Badea, L., The issue of "true" money in front of the BitCoin's offensive, *Theoretical and Applied Economics*, Vol. XXII, 2(603)/2015, pp. 77-90

Tarasiewicza, M., Newman, A., Cryptocurrencies as Distributed Community Experiments, in Cheun, D.L.K.(ed), Handbook of Digital Currency. Bitcoin, Innovation, Financial Instruments, and Big Data, Elsevier Inc., 2015.

Van Alstyne, M., Economic and business dimensions: why Bitcoin has value. *Communications of the ACM* 57(5)/2014, pp. 30–32.

***The Coin Desk site <http://www.coindesk.com/coindesk-guide-worlds-national-altcoins/>* [Accessed 01 March 2017]

***Lista de magazine care accepta bitcoin în Romania*, <https://goanadupabitcoin.ro/bitcoin-romania/lista-de-magazine-care-accepta-bitcoin-in-romania.html> [Accessed 01 March 2017]

PROFITABILITY AND EFFICIENCY ANALYSIS IN WATER AND SEWERAGE SECTOR IN ROMANIA

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Abstract
Profitability is a central element in economic and financial analysis of a company. An enterprise which is not profitable in the long term, slowly taking steps towards bankruptcy. Theoretically profitability means the same concept for any company, but practically there are specific elements in each sector of national economy, which makes the formulas applied in a general way does not lead to correct results, at a correct analysis. The profitability analysis has a major importance in the sector of water and sewage, because most of the enterprises in this sector are public enterprises, and as has been demonstrated in countless cases, public entities are not too well managed. It is important to keep a mirror in front of them, through the provision of specific tools that makes possible a correct analysis of the efficiency, because the resources that it manages are vital to society and their bankruptcy can affect local communities. In this sector the analysis of the profitability efficiency presents peculiarities, so the standard formulas of analysis do not give a correct image on the profitability and efficiency of these enterprises. In this article we analyze the indicators of efficiency and profitability in the sector of water and sanitation in comparison with international data.

Keywords: water policy, non-revenue water, public utilities

Classification JEL: L95, Q25, M11

1. INTRODUCTION

The management of water and sewage service is an extremely important issue in the whole world. In the last few decades have done countless research and studies on the effectiveness of these services. Theoretically we can believe that the services provided by public utilities that have private capital works with greater efficiency to the public, what is interesting that the research carried out in other countries does not confirm this aspect (Abbott, M., Cohen, B., 2009). The first debate on this theme have been started in the U.S. in the '70s with the aim to streamline the sector of water and sanitation. Possible benefits that have been identified are: economies of scale and the better performance of private enterprises.

The most interesting question related to efficiency is: how do we measure efficiency in the public enterprises?

If we take a classical approach from the point of view of the economic efficiency of the enterprise is reflected by the profitability and productivity of the operator of water and sewage. If the approach is wide, the efficiency can be approached from a technical, social and of course economical point of view. Measuring the technical efficiency of the public utilities of water, we make sure of the quality of services provided. For the purposes of social efficiency, we can think about the supportability of the tariffs applied to the opposite quality of services rendered and not ultimately to approach profitability from economic point of view. Outside of the classical approaches, can be searched for specific formulas that take into account the specifics of the sector of activity, the economic strength of the operating areas the results to be comparable between the public enterprises which provide these public utility services in different areas.

2. PAPER BODY

The method of research used

Our research is based on the analysis of the specialized literature and the case study. In the research we based on the literature review and as a method of research we used comparative analysis. We compared the Romanian dates with the international dates and through a critical and interpretative analysis we have formulated the conclusions of this research. To emphasize those set out in the conclusions we have realized a case study.

Literature review

Operators of water and sewage works on a regulated monopoly. Because of the condition of fact, the users are captive on the network and they can't choose the company that provides services of drinking water and sanitation. In the absence of competition, operators have no incentive towards efficiency and innovation (Marques et ali, 2011), this situation can be improved through regulation and the pursuit of efficiency and productivity of these firms. The only way to create competition in the sector is the implementation of a benchmarking system, which makes it possible to compare the parameters of functioning of public enterprises in this sector (Marques, De Witte, 2010).

For economic and financial analysis and long-term sustainability analysis of public utilities, we can use general or specific indicators. In the category of general indicators included indicators of profitability and productivity, and in the category of specific indicators entering: operating cost coverage ratio, non-revenue water, unit running costs and solvency ratio. Specific indicators are used by many national regulatory organizations (ERSAR[1] for example) for monitoring the water sector.

Productivity indicators used in this sector can be total or partial indicators. They are partial productivity indicators, which take into account only a part of the factors of production, for example: the amount of water sold per employee, operating income per employee, etc. The disadvantage of these indicators is that they neglect the effect of other factors such as for example the invested capital (Abbott, M., Cohen, B., 2009). The total indicators are calculated as the ratio between the incoming and outgoing quantities, but are rarely used because it does not take into account the technology used, and therefore in the national benchmarking system are not relevant.

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[1] Portuguese regulator

An important indicator of the category of economic sustainability is the rate of coverage of operational expenses. This indicator aims to reflect the, operational sustainability of the operator and sustainable service provision[2].

In the category of indicators of economic sustainability goes in, and the indicator "Non-revenue water". Non-revenue water is the difference between the volume of water put into a water distribution system and the volume that is billed to customers (IWA Water Loss Task Force, 2003 and Kankoudis et al., 2013). Theoretically this NRW can be generated by:

- physical losses within the transmission and distribution system, whose reasons can be multiple, starting with the poor quality of the pipes lack, of supervision of the losses in the network and up poor operations and maintenance;
- commercial losses (errors caused by the incorrect measurements, data-handling errors, and theft of water);
- non-billable authorized consumption (internal process water consumption, firefighting, etc.) (C. van den Berg, 2015).

Case study

The case study was conducted on a database with 43 regional operators, for the period 2012-2015. Regional operators review covers the entire territory of the country, missing a single operator of the relevant size, the one in Bucharest.

As we have shown in the theoretical approach, the indicator NRW shows us what is the percentage of water that do not generate income. With how this value is higher than the efficiency of the service is lower.

The validation of data in the years 2012 and 2015 appeared two outliers. These data have been corrected. The correction was made at the highest or lowest acceptable value plus one unit (depending on the case, if the value was over the maximum or under the minimum acceptable). Before performing corrections, the normality test does not have significant values. After the correction, the Kolmogorov-Smirnov test for normality has a significant value, so the values are normal.

When calculating NRW per person/day and km/day two regional operators were removed from statistical analysis, because in 2012 and 2015 appeared with negative NRW and the amount of raw water could not be corrected on the basis of estimates. The final analysis was done with the rest of the database.

The evolution of average NRW during the period 2012-2015

Year	N	Minimum (%)	Maximum (%)	Mean (%)	Std. Deviation (%)
2012	43	20,52	76,54	46,5656	14,11739
2013	43	20,75	77,45	46,6553	13,34976
2014	43	24,39	77,72	47,3634	11,43192
2015	43	26,44	78,19	47,2361	11,83005

2

http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/SC/temp/wwap_pdf/Rate_of_Operation_and_Maintenance.pdf - 07.04.2017

Year	N	Minimum (%)	Maximum (%)	Mean (%)	Std. Deviation (%)
Valid N (listwise)	43				

Table no.1 The evolution of average NRW during the period 2012-2015 (Source: own elaboration)

Evolution of average NRW by development regions, in the period 2012-2015

Region	NRW 2012 (%)	NRW 2013 (%)	NRW 2014 (%)	NRW 2015 (%)	Mean (%)
Center	49,25	47,59	48,33	47,29	48,11
North-East	55,09	55,43	54,23	55,19	54,98
North-West	47,23	46,62	45,29	45,33	46,12
South - Muntenia	35,50	43,23	48,23	45,26	43,06
South-East	41,31	40,28	41,82	43,56	41,74
South-West Oltenia	34,94	36,60	38,76	38,98	37,32
West	57,38	56,47	53,86	54,57	55,57

Table no.2 Evolution of average NRW by development regions, in the period 2012-2015 (Source: own elaboration)

It is observed that the average level at the national level of the NRW, expressed in percentage is around 47% (table no.1), which is an extremely high value and which show an increased inefficiency. Analyzing the development regions, the differences are quite large. If in the North-East region the average NRW is 54,98%, in the South-West Oltenia region is 37,32%. These differences are very large, which indicates the need for investments, optimizations, a better management of the NRW (table no.2). Comparing with international values estimated by the WHO (Bill Bona et ali 2006) Romania stands extremely bad. The average value of the NRW on the developed countries is 15%, for Eurasia 30%, and for the developing countries of 35%, compared to 47% in Romania. All on the basis of estimates WHO this NRW is due in a percentage of 70% losses for physical and 30% commercial losses (in this category fall and consumption authorized that are not billed).

Losses caused by NRW, in the period 2012-2015

Specifications	2012	2013	2014	2015
NRW amount at year	923.715.884	886.221.895	845.230.569	846.942.684
Average water price lei / mc	2,776	3,037	3,143	3,272
Average cost of water lei / mc	3,115	3,37	3,939	3,476
Losses from tariff – lei	1.794.964.706	1.884.019.127	1.859.591.775	1.939.837.523
Losses from cost -lei	863.212.494	895.970.336	998.808.963	883.191.831
Total losses - lei	2.658.177.200	2.779.989.463	2.858.400.738	2.823.029.354
Total losses - euro	590.706.044	617.775.436	635.200.164	627.339.856

Table no.3 Calculation of losses caused by NRW 2012-2015 (Source: own elaboration)

On the basis of the calculations it follows that in Romania the annual average is carried out a loss of 600 million Euro in NRW. This loss is not a nominal, i.e. actually carried out, but shows the economic terms of the problem of NRW. Of course, the NRW will never reach zero, but we have taken all measures for its reduction.

The evolution of the average NRW calculated per capita/day, 2012-2015

- cubic meters/capita/day -

Year	N	Minimum	Maximum	Mean	Std. Deviation
2012	40	0,136	0,500	0,293	0,094
2013	41	0,124	0,481	0,272	0,084
2014	41	0,124	0,422	0,252	0,068
2015	41	0,136	0,394	0,250	0,070
Valid N (listwise)	40				

Table no.4 Evolution of NRW cm/capita/day in the period 2012-2015 (Source: own elaboration)

We conclude on the basis of the statistical analysis carried out that in order to ensure access to safe drinking water in Romania are being lost daily 250 liters of water/capita/day, the opposite of the average consumption of 125 liters/capita/day.
Of this 250 litters are lost on the network about 175-200 liters.

The evolution of the average NRW calculated per km/day, 2012-2015

- cubic meters/km/day -

Year	N	Minimum	Maximum	Mean	Std. Deviation
2012	40	24,81	131,75	67,72	27,02
2013	41	32,58	151,53	73,08	30,48
2014	41	23,55	145,57	63,66	26,92
2015	41	24,32	134,88	62,85	26,22
Valid N (listwise)	40				

Table no.5 Evolution of NRW mc/km/day in the period 2012-2015(Source: own elaboration)

We think of the possible indicators related to NRW, the one based on mc/km/day is the most relevant because it takes into account not only the quantities of water and the length of the network which provides the services of an operator for water and sewer. It can be seen that in Romania this value on average is around 63 mc/km/day (table no.5) with fairly serious deviations from the average.

Average NRW per km/day in countries in the year 2015

Country	No. utilities	Water Coverage (%)	NRW (m3/km/day)
Bosnia and Herzegovina	59	95.43	19.06
Bulgaria	33	98.91	18.84
Macedonia, FYR[3]	48	86.33	80.02
Moldova	43	81.17	23.72
Poland	40	95.97	8.08

[3] data for the year 2014

Country	No. utilities	Water Coverage (%)	NRW (m3/km/day)
Romania[4]	43	95.01	62.85
Russia	166	99.65	56.98
Serbia	165	83.97	22.62
Slovakia[5]	11	78.09	8.26

Table no.6 Average NRW in neighboring countries calculated per km/day in year 2015 (Source: IBNET database)

In comparison with the averages of other countries we can say that in Romania is a high value, which must be reduced through the efficiency. What may distort the results is the method of calculation of NRW (in the database IBNet there is not a confirmation of the fact that they have been calculated based on the same methodological basis). For example: in comparison with Bulgaria in our daily lost is 44 cubic meter/ km/day.

Analyzing the rates of return commercial, we dropped the dates of two operators, the same to which the NRW website was incorrectly set (the size of these operators is small), the database remains still relevant. Commercial profitability (ROS[6]) was calculated as the ratio between the result achieved and the operating income from the activity of water.

Evolution of the profitability (ROS) in the period 2012-2015

Year	N	Minimum (%)	Maximum (%)	Mean (%)	Std. Deviation (%)
2012	41	-29,78	19,65	3,3327	10,35457
2013	41	-22,37	25,77	3,1541	9,71966
2014	40	-24,03	36,96	6,1122	10,51870
2015	41	-10,26	38,94	9,6777	9,03794
Valid N (listwise)	40				

Table no.7 Evolution of the commercial profitability in the period 2012-2015 (Source: own elaboration)

It can be seen that the average profitability at the level of the country in the field of public utilities of the water in the period between 2012-2015 recorded an increase. Starting from an average value of 3,27% in 2012 and reaching with 9.67% an increase of 295%. It is problematic that the minimum data appears with a minus sign, i.e., there are public enterprises where this activity generates a loss and is in danger long-term sustainability of the public utility.

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[4] the data relating to Romania as the source www.ibnet.org, the source of data is the Romanian Association of Water
[5] data for the year 2013
[6] Return on sales

CONCLUSIONS

NRW is one of the most important indicator of efficiency in the field of water. By analyzing several variants of the calculation of the non-revenue water the conclusions that we can formulate them are kind of sad. Not all public enterprises have put emphasis on lowering the NRW, they have not realized that this issue of efficiency creates profitability problems for them. Today all recognize the importance of discounts NRW, only that most see it as the only solution to the problem of NRW through the investment in water infrastructure. It is clear that theoretically it is more "simple" if it open new investments, politicians can cut ribbons and engineers can design the new infrastructure. For the reduction of losses due to the physical condition of the infrastructure it takes time, dedication and a permanent effort to find the weak points and to perform maintenance operations, even in difficult conditions. The reduction of commercial losses, involves unpopular decisions such as: disconnection of illegal consumers, the elimination of fraudulent practices of the meter readers, if there are these practical.

If we take into account the economic effect of the NRW (nor the environmental and social are not negligible), then we can say that annually generates a loss of 600 million euros and even if we want to minimize, by a calculation minimalist all at 150 million euros. Both figures are extremely high, the first means 30/euro/inhabitant/year of Romania.

NRW calculated per km/day is on the decline, but still the values are extremely large in comparison with international ones.

Profitability is low in the water sector, that theoretically would not be a problem, because we all can agree, that a situation close to zero is acceptable for the consumers. The problems appear opposite of the investments from european funds, where the own contribution of 7-10% of these operators has been secured from bank loans and insurance financing repayments of loans there is a need for greater profit. Those who can't streamline and enhance the work we can get into default and ultimately into bankruptcy, which is extremely problematic for public bodies and consumers.

This research will be continued by analyzing the correlation and connections of the evolution of the NRW and return.

BIBLIOGRAPHY

Abbott, M., Cohen, B. - Productivity and efficiency in the water industry. Utilities Policy 17, 2009

Bill Kingdom, Roland Liemberger, Philippe Marin - The Challenge of Reducing Non-Revenue Water (NRW) in Developing Countries, Water supply and sanitation sector board discussion Paper series paper no.8, The Word Bank Group, 2016

Caroline van den Berg, Drivers of non-revenue water: A cross-national analysis, Utilities Policy, 2015

Danilenko, Alexander, van den Berg, Caroline, Macheve, Berta, Joe Moffitt, L. - The IBNET Water Supply and Sanitation Blue Book 2014. The International Benchmarking Network for Water and Sanitation Utilities Databook, Washington, D.C., 2014

Farley, Malcolm, Trow, Stuart - Losses in Water Distribution Networks: a Practitioner's Guide to Assessment, Monitoring and Control. IWA Publishing, 2003

Frauendorfer, Rudolf, Liemberger, Ronald - The Issues and Challenges of Reducing Non-revenue Water. Asian Development Bank, 2010

IWA Water Loss Task Force, 2003. Assessing Non-revenue Water and its Components: a Practical Approach. Water 21.

John Cubbin - Efficiency in the water industry, Utilities Policy, 2005

Kanakoudis, V., Tsitsifli, S., Samaras, P., Zouboulis, A. - Assessing the performance of urban water networks across the EU mediterranean area: the paradox of high NRW levels and absence of respective reduction measures. Water Sci.Technol. Water Supply, 2013

Lenzi, C., Bragalli, C., Bolognesi, A., Fortini, M. - Infrastructure leakage index assessment in large water systems. Procedia Eng. 70, 1017-1026, 2014

Marques, R.C, De Witte. K. - Towards a benchmarking paradigm in the European water and sewerage services. Public Money and Management, 30, (1), 42, 2010.

Marques, R.C., Simoes, P., Pires, J.S., - Performance benchmarking in utility regulation: the worldwide experience. Polish. J. Environ. Stud. 20 (1), 125-132, 2011

Matthias Walter, Astrid Cullmann, Christian von Hirschhausen, Robert Wand, Michael Zschille - Quo vadis efficiency analysis of water distribution? A comparative literature review, Utilities Policy, 2014

Patrick Mande Buafua - Efficiency of urban water supply in Sub-Saharan Africa: Do organization and regulation matter?, Utilities Policy, 2015

R.Quentin Grafton, Long Chu, Tom Kompas - Optimal water tariffs and supply augmentation for cost-of-service regulated water utilities, Utilities Policy, 2014

Rita Martins, Carlota Quintal, Luís Cruz, Eduardo Barata - Water affordability issues in developed countries - The relevance of micro approaches, Utilities Policy, 2016

Steven Renzetti, Diane P. Dupont, Tina Chitsinde - An empirical examination of the distributional impacts of water pricing reforms, Utilities Policy, 2014

HAVE TRUST THE STATE ACCOUNTING AND ITS RESULTS? ASYMMETRIC INFORMATION AND THEIR RISKS FOR PARTICIPANTS IN ECONOMY

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Abstract

The Romanian state controls the economic actors through their different specific institutions. In the present study, we were focusing on the impacts of controls only on accounting and taxation, as well as studying the risk of these controls.

Due to the asymmetric information nor state representatives (inspectors or officials) nor the private sector entrepreneurs (taxpayers) aren't fully informed, therefore are suspicious toward each other: one hand the inspectors assume that errors exist anyway (getting errors), other hand the taxpayers also are distrustful toward the auditors (always will be penalized, because the tax and accounting legislations are so complex, that they get an error anyway). This has moral consequences: the authorities do not trust the entrepreneurs, the taxpayer does not trust the inspectors, which is disadvantageous for both parties and the formation of distrust resulted in excess bureaucracy, where the state retrieved the taxpayer.

Keywords: control, risk, asymmetric information, accounting

Classification JEL:

INTRODUCTION

The Romanian government reserves the right to tax calculation, payment of VAT and profit imposed by the ever-check, sometimes even falling overboard by the constant checks. However, since we are talking about asymmetric information, the control of the accounting discipline is solved by bureaucratic methods, the best example for this is the many times and in many ways modified 394 Return.

The first check by the state of the companies' accounting is that the so-called chief accountant must possess the title of graduate in economics university, or above a certain size of company, book expert or auditor (*Rom.:* expert contabil, auditor financiar). With this regulation, the government will try to enter some level of professionalism in the system, but the fact that appointed the accountants (professional accountants) as performing public functions persons, it multiplied the size of some penalties, because the violation of law was committed not by "normal" persons, but by persons performing public functions.

There is an assumption on the part of the state, according to which the companies misled in "professional" way the current state both by lacking the compliance with the accounting laws, and the method of calculating the tax. Virtually occurs an asymmetric information situation, that is, market participants are not familiar with their own accounting, or their tax calculation methods and their management, and the state by its own methods assumes that tax fraud is growing.[1]

The economic participants are increasingly vulnerable to government inspectors' over control, which brings short-term benefits to the state, but is harmful for all in the long run, because there will be no company that is checked out, and the amount of recovered penalties are such that the companies are incapable to produce enough to recover it.

It is very important to investigate the fact that, due to asymmetric information, and due to the lack of confidence, the cost of the state escalate tremendously, which are devolved by the state upon the economic entities, thus eroding their competitiveness of and profitability.

The research methodology is an empirical research, investigating the Romanian firms' accounting, the panel included 52 companies from Odorheiu Secuiesc /Székelyudvarhely/, Harghita County. I maintain that this number is fully representative, because the Accounting Act and the Tax Code are applicable for everyone.

ASYMMETRIC INFORMATION AND BOUNDED RATIONALITY

It has long the theoretical economists are disturbed by the problem of optimal taxation and confidence of the state in economic entities.

According to the classical theory the state authorities are often poorly informed about the accounting and tax data, the quality of the amounts concerned. They do not know the exact calculation method of those (in theory they assume that everyone respect the standards, and in fact by a lot of controls it discloses its lack of confidence in). However, if badly informed, always it tries to use efficiently these information and to decide rationally based on these (an interesting insight of the current government to reduce the VAT and to increase the payments). According to these bounded rationality theories the state has often misconceptions: it don't comes having little knowledge, but about what they consider to know they know that badly, and the information is not used to full effect, and in spite of their specific knowledge decisions are taken not even necessarily in a rational way.[2]

The best analysis of this phenomenon is found in the article of Akerlof [1970][3] according which the asymmetric information intuitively is a simple concept: the entities standing on one side of the market have (relevant) level of information different from that of the other side, and often – though not necessarily – one side of the market benefits from information advantages against the other. These two basic concept types of asymmetric information are borrowed by the economics from the literature of insurance. We are talking about a moral risk if the action of one party is not discernible – more precisely is unverified discernible - for the other party. For hidden information, the property of one of

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[1] https://codfiscal.net/38885/raportul-anual-al-consiliului-fiscal-evaziunea-fiscala-138-din-pib-anul-2012

[2] See: In 2010 under the Regulation 34/2009 had paid a tax the companies who had no revenues (section 18, paragraph 2-3, revenues 0–52,000 RON, tax 2200 RON)

[3] AKERLOF, George A.: *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*. The Quarterly Journal of Economics, Vol. 84, No. 3. (Aug., 1970), pp. 488–500.

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the parties – or that of its offered goods – is not fully known to the contractual partner. The asymmetric information may result in problems of inefficiencyand according to the theory a party often comes more badly at least, as in the case if the information would be symmetrical. There are market and non-market mechanisms or institutions for the partial solution of the inefficiency problems. Sometimes the loss of efficiency in principle disappears completely, but it is far from certain that this is extorted by the "free market". In this case, a certain conventional theory see an opportunity to intervene Pareto improvement. However, if the governing body itself – or the economic policy in general – is lacking of information, it is feared that a market failure is coupled with regulatory failure.

Romania – quantified

Currently in Romania, a limited liability company, which has an emlpoyee of 8 hours a day, gives in the following reports:

No.	Report Name	Report Reason	Frequency
1	112's	Includes taxes paid on employees	Monthly
2	100's	Profit tax or micro tax	Three-month
3	Financial report	This is the summary of financial data for the first semester	
4	Annual financial report – annual balance	This is the summary of financial data for the year	Semester
5	300's	Report on VAT	Trimester
6	394's	Report related on economic transactions	Trimester

If a company does not carry out international operations, hands in 26 reports to the tax office per year within 12 months. If it have at least one international business transaction it jumps up to 43, since the 300's and 394's reports are to be put down monthly.

All of these are a permanent back control by the state, since the 394's report – what is recognized by the state – is not the fiscal reporting category, but also a kind of information. Of course, the handing in of these reports outside the deadline or missing to hand in it, incurs a fine.

In international comparison, Romania ranks 50th in terms of payment of taxes.

CONCLUSIONS

It would be very important to establish a relationship of trust between the company and the state. The lack of trust is expressively shown by those very much reports that a company confesses, or their control back using a sophisticated software (eg. intelligent PDF, comparison of the 100's returns to the balance sheet, etc.) as trough personal checks.

At the macro level it is noticeable that in theory the trust reduces transaction costs, but virtually in Romania its effect spill further through the complicated legal system. Eg. there is a Book law, there is also the Tax Code, the Tax Procedure book, the explaining standards, etc.

The practice followed by the Romanian state, that the "criminal – policeman" or "unreliable payer – checking authority" is harmful in the short term, but even more harmful in the long run, because extorts a permanent defensive behavior from the participants. This is a moral hazard also, because the participant in defensive believes entitled to try to evade the authorities, and distorts the already asymmetric information, because the "police" already gets an error.

Instead, it would be better to introduce a "service – client" attitude, because the economic participant feels the state provides a service for him, which he avails oneself off as a client, he get something for his money and he needs not fear permanently.

In a successful society the community building based on mutual confidence is self-evident, economic participants know that they should limit their short-term goals (immediate tax savings) because in this way the society can prosper in the long run, which is good for everyone.

This long-term approach lacks from the behavior of the state versus participants, especially in Romania, where the constant back control as well of the individual, as of the participants is considered normal, self-evident phenomenon (see the Securitate, the economic police for over 50 years), where it could not be and can not be thinking in the long run, because something is always changing, it could not and can not be in conditions of long-term, the *now*, the *immediately* is dictating both the conduct and behavior of state agencies and economic participants.

Virtually to rebuild the trust and the social capital, in the perspective of the state and economic actors represents a key challenge for the coming years, decades.

BIBLIOGRAPHY

1. AKERLOF, G. A.: *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*. The Quarterly Journal of Economics, Vol. 84, No. 3 (Aug., 1970), pp. 488–500

2. KIRCHLER E.: *Psihologia Economică a Comportamentului Fiscal*. /Economic Psychology of Tax Behavior/ Ed. Risoprint, Cluj Napoca, 2013

3. VINCZE János: *Miért és mitől védjük a fogyasztókat? Aszimmetrikus információ és/vagy korlátozott racionalitás.* /Why and from what we protect consumers? Asymmetric information and/or bounded rationality/ Közgazdasági Szemle, LVII. évf., 2010. szeptember (725–752. o.)

4. * * * *Adózási Törvénykönyv 2010-re* /Cod Fiscal – Tax Code 2010/

STANDARD-COST METHOD: REALITY AND MODERNIZATION TOOLS

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Abstract
The standard cost method is one of the most discussed methods, both in terms of positive and negative appreciations. The need in changes at the methodology level is generated by the high costs in elaborating the standards. The typology of the methods envisaging the modernization of the standard cost method is very large. Their selection is done according to the field of activity, the complexity of markets and personnel skills. A quite important factor is the knowledge and skills of executive body in in the field of costs management. However, the decisive factor is related to the persuasive skilss of the executive management in front of the board members, as competitiveness and innovation are the key factors in increasing the company's performance.

Keywords: standard cost method, performance evaluation, target cost

Classification JEL: *M41, M48*

INTRODUCTION

Standards' development requires a significant contribution from a variety of sources. Engineering studies, historical experience and input from operating personnel are three potential sources of quantitative standards. Standard cost is the planned unit cost of goods or services made over a period of time, that can also be referred to as target costs. These costs are necessary for budgeting by planning, control and motivation processes, which are essential in the calculation and analysis of variance. Standard costs can be calculated either based on marginal costs (variable costs), or based on absorbtion costs (fixed costs). Financial and operational planning requires estimations of future prices and raw materials. Managers can use current standards to assess the future material, human and financial resources. Similarly, standards can also serve as a basis for cost analysis, sales volume and profit.

Although standard cost is on of the oldest methods, we support the oppinion of researchers who state that this is one of the most used methods to calculate costs. It is obvious that the technical and scientific progress has conditioned its improvement. In this regard, we have initiated our study to characterize the main types of standards used, and, in order to see the new trends we have made a correlation with the entity's performance, budgets and the latest Jananeese techniques.

EVOLUTION AND DISTINCTIVE FEATURES OF THE STANDARD COST METHOD

The concept of "*standard*" was introduced in accounting management by F.W. Taylor, who is considered the founder of planned costs. According to specialized western sources, the calculation of planned costs has known two phases of development. Originally, the complete standard cost system was developed by G. Charter Harrison (1911, Solomons, 1968, Tabara and Briciu, 2012), and subsequently improved through *flexible calculation of standard costs*.

Stage I. Estimated Cost System - 1901, USA   Stage II. Standard Cost System - 1918, USA
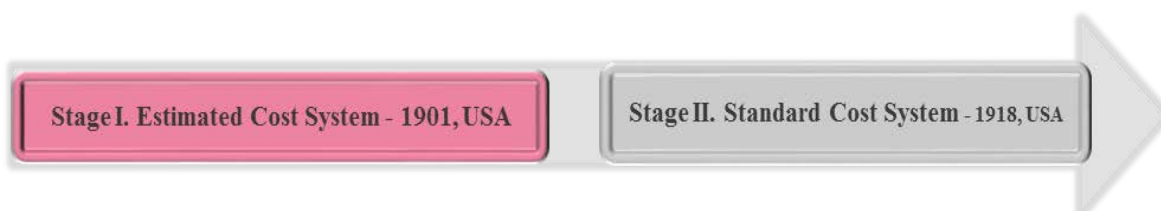
The essence of the standard cost method lies in the use of different sets of rules developed based on data from previous periods, the trednds at sectorial level, as well as taking into account the long and short -term strategies of the entity. Cost accounting considers these costing rules as standards, according to the standard cost method. This method operates with four kinds of standards: **basic standards**, **ideal standards**, **attainable standards** and **current standards**. *Basic standards* refer to long periods and remain unchanged, providing a permanent basis for long-term comparisons. They are designed to show trends over time in the prices of materials, labour rates and labour efficiency and their impact on economic activity. *Ideal standards* are based on the idea of perfect functioning. Perfect operating conditions include the following expressions: no waste, no scap, no damage and uninterrupted. Japanese entities use standards to identify areas that can generate large cost savings in the result of careful examination. At the same time, ideal standards have a negative motivational impact because they are less likely to be achieved. P. Weetman (2010) supports the idea that the ideal standards apply only where "nothing goes wrong". Attainable standards are the most frequently used and are based on the efficiency of the processes, but not their idealization. These standards include allowances for material losses caused by fatigue or equipment damages. Standards should be based on high performance at an attainable level. *Current standards* are based on current levels of efficiency in terms of allocations for accidents, waste, loss, etc. The main disadvantage of using current standards is the fact that it provides no incentives for improving current levels of performance (F2, ACCA 2008, p. 278). Currently attainable standards are the most frequently used because they give a fair base for comparisons, they set a standard which ought to be achieved and they give staff a sense of achievement when the attainable target is reached (Weetman, 2010). Attainable standards can generate the highest levels of performance if the persons, subject to standard, participated in their creation.

STANDARD COST METHOD AND ENTITY'S PERFORMANCE

Cost analysis without rationalizing is not sufficient in making decisions. Streamlining relates to systematic organization based on rational rules and methods. Standard cost method operates based on projected costs, determined by standards (rules) that help to evaluate the entity's performance in a given period. Performance assessment review in terms of their nature provides two concepts (Gervais, 2005, p. 124):

1. Assessment of reasonable skills of those responsible for achieving the objectives (standards) set by them or by senior managers. The benchmark in measuring the performance of this kind relates to evaluating the differences between the actual cost and standard cost;

2. Appreciating the effort that has to be achieved:

- by reference to an objective (standard) with an ideal vision about the processes of continuous improvement. The performance evaluation has as a starting point the calculation formula: (actual cost at the beginning of the period – actual cost at the end of the period) x 100 / standard cost;

- by controlling the actions, taking into account the real situation (favorable or unfavorable). The performance evaluation is performed by comparing the percentage differences in cost (actual cost – standard cost x 100 / standard cost) and the resulting differences from activity in the percentage (actual activity – standard activity x 100 / standard activity).

Performance evaluation is made by comparing differences in cost in percent (actual cost – standard cost x 100 / standard cost) and the differences resulting from activity in percent (actual activity – standard activity x 100 / standard activity).

Budgetng is managers' support in planning and, during certain periods, standards are used for controlling and evaluation of management performance. Static budgets (general) are not advisable in the efficiency assessment, as the basis for evaluation is known and can be anytime compared with the target values, which can be modeled according to the managers' expectations. At the same time, flexible budgets assess efficiency by comparing actual costs and actual revenue of the budget with the corresponding amounts for the same level of activity. Significant variations of flexible budget generates important feedback for managers, representing a basic forecast of possible failures and also supply the causes of variations (Hansen and others, 2009). Therefore, the standard cost facilitates flexible budgeting having the role to conduct a more detailed analysis of variations.

MODERNIZATION INSTRUMENTS OF STANDARD COST METHOD

The new market conditions cause a number of changes in the cost calculation. The price set at the design stage of certain types of new products is not based on the cost but represents the maximum limit that the market is able to pay. As a result, the core of the method is transferring the cost center to the external market that dictates the price. Costs must be adjusted for price and provide a profit margin. The difference between the selling price and profit margin is the target costing and managers follow the actual cost, avoiding exceeding the target cost. During the production process phases, staff activities and efforts should contribute to ongoing cost reduction called Kaizen costing. Typically, during the first year of production, standard cost is the target cost, and the target is focused on

permanent reduction thereof. During the second year, the actual cost of the first year is the starting point in the permanent cost reduction (Gervais, 2005, p. 135). The *Kaizen* term resulted from two Japanese words "*kai*" – change and "*zen*" – good. *Kaizen standards* are improving continuously, representing a form of actual attainable standards that focus on reducing costs (Hansen and others, 2009).

Target cost was used in 1965 by Toyota in Japan, but since the 1990s, it became known worldwide. The main idea is focused around the stock price that is required by the market, by the competitive situation and the cost must adapt to meet market demands. Kato Yakata has shown that setting the target cost is examining all ideas of cost reduction when planning, developing and designing the product model. Researchers have shown that 80% of the cost is determined in the design phase (Baratay and Monaco, 2015, p. 249). Target cost should not be interpreted as a technique used in the calculation of cost of production, but as a management practice oriented towards *competitive environment* (examination of customer preferences), *the future* (anticipates the gains based on savings and experience), involves *internal transversality* (involving different departments in various stages of marketing research, production methods, management control, supply) factors supporting the supervisory and non-financial performance. The calculation formula is reduced to the calculation relationship:

$$\text{Target cost = Market price – Expected profit}$$

Standards have an important role in activities based costing system (ABC). The cost of activity is calculated based on the amount of resources consumed by each activity. To avoid calculating the resource consumption for hundreds of activities there have been developed standard patterns of resources consumption based on historical experience. The ABC system uses standard cost in control processes, as a means to reduce costs. Activities are divided into those that bring added value and those that do not. For each activity is approved the production ideal, then, are made efforts to reduce costs in order to achieve the ideal level (Hansen and others, 2009).

CONCLUSIONS

Known as one of the oldest methods, standard cost is at the same time, and one of the most used methods to calculate the cost of goods or services. High costs in developing standards and further efforts are the main reasons that determined it to become one of the most criticized methods. Finally, if the type of activity requires certain standards in costing, and pricing is set by cost basis, the entity obtains benefits from the use of standard cost method. Another condition that must not be neglected keeps measuring performance compared to the other methods.

Japanese techniques have appeared aiming to correct the deficiencies of standard cost method and may be used by entities that produce smaller quantities of products. Another advantage of this method lies in the fact that it can be applied in parallel with the ABC method. In other words, Kaizen standards can be adapted to the traditional system of costs division based on activities and processes.

BIBLIOGRAPHY

1.   Association of Chartered Certified Accountants and the Chartered Institute of Management Accountants, F2 Management Accounting, Course notes, Published by: *Kaplan Publishing UK,* 2008, 312 p.

2.   Baratay, Ch., Monaco L., Contrôle de gestion, 4 e. ed., Gualino éditeur, Lextenso éditions, 2015, 254 p.

3.   Hansen, D., Mowen, M., Guan, L., Cost Management: Accounting & Control, 6e, South-Western Cengage Learning, USA, 2009, 865 p.

4.   Hribar, P. , Kravet, T. and Wilson, R., A new measure of accounting quality, *Review Accounting Studies,* Springer Science, Business Media New York 2013, pp. 506–538

5.   Kim, S. and Suh, Y., Ranking of Accounting Information Systems for Management Control, *Journal of Accounting Research*, Vol. 29 No. 2 Autumn 1991, pp. 386-396.

6.   Gervais, M., Contrôle de gestion- 8 éd.. Paris:Ed. ECONOMICA, 2005, 774 p.

7.   Tabără N., Briciu S., Actualități și perspective în contabilitate și control de gestiune, Iași: Editura Tipo Moldova, 2012, 626 p.

8.   Weetman, P., Management Accounting, Pearson Education Limited, 2010, 587 p.

LAND GOVERNANCE AND SUSTAINABLE SOCIAL DEVELOPMENT. THE MAPUCHE CONFLICT IN CHILE.

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Abstract

Land tenure and governance problems are the main causes of the conflict between the Chilean State and some Mapuche organizations. The origin of it is related to how the different governments have affronted the land occupation, privatization and concentration in three regions of the south of Chile. The conflict generates violence between landowners and some armed groups and social-economic problems in the industries in the region. The conflict complexity is related to the absence of social integration and social sensibility, affecting the human dignity, justice and discrimination of local people. The problem is analyzed according the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) from FAO; the integrated knowledge creation (expert and expertise) thru active participation process; and the international project management competences (IPMA). The results show a failure in the integration efforts among stakeholders during the project implementation process; the absence of social skills and behavioral competences of the decisions makers; and the violence of some groups that affect the rule of law, are the main cause of the conflict. Finally, the Working With People as a governance model would improve the relationship between the stakeholders and facilitate the implementation of the Voluntary Guidelines of Governance from FAO, getting a sustainable social development.

Keywords: *Sustainable rural development; Land governance; Social Learning; Working With People; Mapuche conflict; Project management competences; Stakeholders.*

Classification JEL: R58

1. INTRODUCTION

The governance is the way in which the stakeholders coordinates each others to achieve common objectives through the exchange of knowledge, experiences, resources and ideas, at political, social and economical level (Palmer and others, 2009). Food and Agriculture Organization of the United Nations (FAO) define the Land Governance as the "rules, processes and structures through which decisions are made about the use of and control over land, the manner in which the decisions are implemented and enforced, and the way that competing interests in land are managed" (Palmer and others, 2009),

highlighting the importance of a responsible land governance to contribute to the realization of the right to adequate food, eradicate poverty, promote environmental protection, sustainable social development (FAO, 2012). The Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) indicates the voluntary principles that governments and communities have to assume to implement a responsible governance of natural resources, specially in land tenure (FAO, 2012; Palmer and others, 2009). The roles and responsibilities of all the stakeholders were defined by consensus between States and public organizations, civil society, private sector and academics. Regardless the roles, is important to consider the VGGTs implementation as an "inclusive multi-stakeholder processes" (Beckh and others, 2015) as proposed in the Working With People (WWP) planning model (Cazorla and others, 2013) where the different knowledge, experiences and expertise have to converge allowing the mutual learning (Cazorla and others, 2013). To achieve a sustainable development, projects have to include not only the technical factors, it have to consider a "human right approach of land governance" (Beckh and others, 2015; FAO, 2012). Governance quality, land tenure and property rights can affect the distribution of power in society and the creation of conflicts (Palmer and others, 2009).

The conflict between the Chilean State and some mapuche organizations started with a government initiative, the Araucania Occupation, which it aims was to include the indigenous communities to the Chilean society to use and get a profit of their lands (Pineda, 2014), located in the Araucania, Bio-Bio and De Los Ríos regions. In 1860 decade the government used military force and legal tools to change the boundaries of Chilean territory and establish the Chilean law in the mapuche territory (Aylwin, 2000). This process allowed the expropriation of their lands to promote the establishment of non-mapuche communities, affecting the liberties and organization system that the mapuche people used to have over his territory. The land tenure security was affected (FAO, 2012). At the beginnings of the XX century the "Indigenous Settlement" process was carried out. On this process, the government gave around 3000 title deeds (5-6% of all the territory that they used to have) to different members of the mapuche community without consider the social, political and territorial organization of them. Since then, mapuche communities have claimed their original lands and the recognition of their autonomy and social organization (Gerber and others, 2016). Policies and economic growth in Chile has promote the development of profitable projects related to the exploitation of natural resources (Aylwin, 2000; FAO, 2014; Gerber and others, 2016; Pineda, 2014). Nowadays, as the majority of the conflicts related to natural resources, the mapuche conflict is recognized as a conflict that involves violence, and even terrorist act (Aylwin, 2000; Forest Policy and Economics, 2013), promoting social instability, decreasing the economic development in the region and affecting the rule of law (Agostini and others, 2010; Aylwin, 2000; FAO, 2013, 2014; Gerber and others, 2016). Forest conflicts can be defined as a "lose-lose situation and a manifestation of a governance failure" (Forest Policy and Economics, 2013), instead a good governance system would permit a win-win process.

With a growing economy and as a developing country, the investment in Chile has increase in the last years. Those investments generated the development of new complex and demanding projects. Many of the social conflict related to projects interventions are a consequence of an absence of behavioral and contextual competencies (De Los Ríos and others, 2015) due to the "blueprint" approach of the projects, where is mainly consider the technical viability of them and not the political, social, ethic and cultural context (Cazorla

and others, 2013). This investigation analyzes the dimensions of the WWP model, and its consideration from the companies that have developed forestry and hydroelectric projects in the mapuche conflict zone. The implementation of the WWP model, the IPMA competencies and the VGGTs can contribute to generate the shared knowledge between all the stakeholders. There is a direct relation between the WWP model and the International project management competencies (Cazorla and others, 2013; De Los Ríos and others, 2016a) that could allow the consecution of a responsible governance of land tenure.

2. RESEARCH METHODOLOGY

The investigation methodology incorporates different information sources. Mapuche leaders statements and secondary information review which permit clarify the dynamic of the conflict in the last years. We consider reports (political, business and journalistic) related to the impact of the adopted interventions. Initiatives from the National Corporation for Indigenous Development (CONADI), Arauco S.A. Forestry Company and Enel Energy Company (ex-ENDESA) were analyzed. The reactions of the mapuche coordinator organization (Coordinadora Arauco Malleco – CAM) and the Territorial Resistance Organs (ORT) were considered.

The consideration of WWP dimensions (Cazorla and others, 2013) during the project development and interventions in the conflict area was analyzed. This model allows the generation of shared knowledge, integrating the expert and experienced knowledge, transforming knowledge into action through participation of all the stakeholders affected with the projects (De Los Ríos and others, 2016b). The WWP dimensions, the interaction among them and with the media allows the social learning, participation and dialogue with the stakeholders have demonstrated that this model offers a sustainable approach (De Los Ríos and others, 2016a). The model dimension are related with the IPMA competences (Cazorla and others, 2013). Each dimension cover specifics stakeholders: In the Technical-entrepreneurial are private companies and all their initiatives; in the Political-contextual dimension are the poltical organizations and public administrations; and in the Ethical-social dimension are the Civil society organizations, ONGs and communities, its culture and moral. All the stakeholders have to consider the stakeholders of other dimensions. At the same time, the stakeholders have to own and manage all the competences and elements related to the three dimensions (Cazorla and others, 2013).

3. RESULTS AND DISCUSSION

3.1 Technical-entrepreneurial dimension: Forestry and Energy companies.

From the beginning the conflict has been related with the land property rights. State initiatives have promoted the development of natural resources exploitation business, increasing land concentration (FAO, 2014). This process generated a decrease on mapuche land surface, forcing them to leave their properties with cultural interest and sacred heritage, affecting forest tenure of the mapuche people. The forestry companies cause decrease of native forest; less rural communities lands; fauna and flora losses; sacred places interruption; among others (Leyton, 2009; Pineda, 2014). At the same time, the forestry surface increase has caused a decrease on family farming, affecting the rural

families food security (FAO, 2013) and promoting their migration to urban centers (FAO, 2014).

The energy industry, have developed project in mapuche territory with ancestral importance (Aylwin, 2000). The biggest conflict related with the energy industry took place in Alto Bio-Bio. Ralco project flooded 3.456 hectares to build six hydroelectric dam displacing 500 pehuenches (Aylwin, 2002). The affected communities opposed to the project. They even denounced the situation to the Interamerican Commission of Human Rights, nevertheless the project was supported from the government, thus it was developed (Aylwin, 2000, 2002; Pineda, 2014). Those projects didn't consider the communities as a whole, and in certain cases the project team negotiated only with some of the community members (Aylwin, 2000; Pineda, 2014). The interventions analysis was not holistic, ignoring the context in which the projects were developed (De Los Ríos and others, 2015; FAO, 2012; Palmer and others, 2009). Neither has it been given the chance to create a shared knowledge, where converge the "planner's expert knowledge with the experienced knowledge of the affected population" (De Los Ríos and others, 2015).

Arauco S.A., being aware that for several years the forestry development has been privileged and they, as company, did not consider the mapuche culture during the implementation of the projects, has developed a Mapuches communities relationship policy, where the singularities of the culture are recognized, promoting the consideration of mapuches people requirements and traditions during the project management through dialogue and consultation. At the same time, Enel has generated a relocalization plan for the affected families, giving to them private land properties and community lands.

3.2 Political-contextual dimension: CONADI

The Indigenous Law (1993) established the National Corporation for Indigenous Development (CONADI), "the mission of which is to advise the government on national policy toward the indigenous population" (Agostini and others, 2010). CONADI programs for indigenous families and communities developments include scholarships, subsidies, and funds for land purchase. The organism also has a "conciliation division" which aim is facilitate the resolution of land tenure conflicts between mapuches, or between mapuche and non-mapuche. Nevertheless, a report from an parliament investigator commission, with members of all the political spectrum, said that "CONADI must stop acting with favoritism and political intentions", proposing the creation of a Ministry of Indigenous Issues and Indigenous Peoples Council (Cámara de diputados, 2016), It also indicates that the land policy that has been carried out, has been one of the causes of the conflict aggravation. Some mapuche organizations have said that CONADI has "promote the division and disintegration" of mapuche communities, favoring the companies instead the indigenous families well being (País Mapuche, 2013).

3.3 Ethical-social dimension: mapuche coordinator organization (CAM)

Some communities and its representatives have said that the State has not fulfilled the commitment acquired when the Indigenous and Tribal Peoples Convention agreement was signed (C169 – International Labour Organization) (Aylwin, 2000, 2002; Pineda, 2014). The conflict has not been exempt of violence. According the Guild Association of

Araucania report, in 2015 there were 298 police and legal complaints of violence acts with indigenous connotation, in 2016 there were 168. Mostly of them were complained in La Araucanía region and the main victims were forestry suppliers.

"Arauco Malleco Coordinator" is a social organization that represents and coordinates the "resistance communities" in conflict for ancestral territories. Nowadays is practically disarticulated (Pineda, 2014), nevertheless, there appeared new groups self-nominated Territorial Resistance Organs (TRO), who perform "sabotage acts (fire and roadblocks mainly) against the companies that develop different kind of projects in the region" (Weftun, 2016).

3.4 VGGTs and WWP

The consideration of the technical, contextual and behavioral competences, by all the stakeholders, through WWP model could facilitate the implementation of the VGGTs and its principles (table no.1).

Table no. 1: Relation between WWP dimensions and VGGT implementation.

WWP	Stakeholders roles for the VGGT implementation
Technical-entrepreneurial	Respect human rights and legitimate tenure rights. Act with due diligence to avoid infringing on the human rights and legitimate tenure rights of others. Include appropriate risk management systems to prevent and address adverse impacts on human rights and legitimate tenure rights. Provide for and cooperate in non-judicial mechanisms to provide remedy. Identify and assess any actual or potential impacts on human rights and legitimate tenure rights in which they may be involved.
Political-contextual	Recognize and respect all legitimate tenure right holders and their rights. Safeguard legitimate tenure rights against threats and infringements. Promote and facilitate the enjoyment of legitimate tenure rights. Provide access to justice to deal with infringements of legitimate tenure rights. Prevent tenure disputes, violent conflicts and corruption.
Ethical-social	Have an active participation during the consultation and participation process. Monitor and evaluate (wih the State) the outcomes of agreements, projects, programms and porfolios related with Land Tenure. Promote and provide equitable, secure and sustainable management to self-governed resources

4. CONCLUSIONS

From the beginning, the Araucania Occupation process has affected the Land Governance, preventing a sustainable development. The projects developed has not been exempt of problems, specially because those didn't consider the culture of mapuche society (Gerber and others, 2016; Pineda, 2014), something essential to be consider in any project (Cazorla and others, 2013; De Los Ríos and others, 2015). Nowadays exist public and private initiatives to solve and avoid new conflicts; nevertheless those initiatives haven't been enough. All the stakeholders should have been considered from the beginnings. At the same time, the violent acts do not permit the consecution of a responsible governance of land tenure (FAO, 2012). The companies initiatives have considered contextual and behavioral competencies, relating three WWP dimensions, but,

to achieve a responsible land tenure, instances to create shared knowledge must be performed, permitting the social learning (Cazorla and others, 2013) and allowing the free development of the stakeholders, without affect their principles and culture (FAO, 2012). The State and its organisms have a fundamental role, using adequately the tools and having a good disposition to solve and avoid new conflicts. State organisms must ensure the implementation of the VGGTs. A correct interaction between stakeholders, an active and efficient participation have to be considered. For a successful project, State organisms and private companies must have a competent project team who consider all the stakeholders (social, political and cultural context) during the formulation and execution process, because the "planning of intervention must be built on self-organized tendencies, aimed for encouraging people to act collaboratively" (Cazorla and others, 2013).

REFERENCES

Agostini, C., Brown, P., & Roman, A. (2010). *Poverty and inequality among ethnic groups in Chile*. World Development, 38(7), 1036–1046.

Aylwin, J. (2000). *Los conflictos en el territorio mapuche: antecedentes y perspectivas*. Perspectivas, 3 (2), 277–300.

Aylwin, J. (2002). *Se inauguró la central hidroeléctrica Ralco en el Alto Bío Bío.* Enlace Mapuche Internacional, 1–2.

Beckh, C., Gärtner, E., Windfuhr, M., Munro, P., Weigelt, J., & Müller, A. (2015). *Taking stock after three years of adoption: Experiences and strategies for implementation and monitoring of the UN Voluntary Guidelines on Tenure (VGGT).* International Soil and Water Conservation Research, 3(4), 324–328.

Cámara de diputados, Congreso de Chile. (2016). *Informe de la Comisión especial investigadora de los actos de Gobierno en relación con la situación de inseguridad que se vive en la región de la Araucanía.*

Cazorla, A., De Los Ríos, I., & Salvo, M. (2013). *Working With People (WWP) in rural development projects: A proposal from social learning.* Cuadernos de Desarrollo Rural, 10 (70), 131–157.

De Los Ríos, I., Ortuño, M., & Rivera, M. (2016a). *Private-Public Partnership as a tool to promote entrepreneurship for sustainable development: WWP torrearte experience.* Sustainability (Switzerland), *8*(3).

De Los Ríos, I., Rivera, M., & García, C. (2016b). *Redefining rural prosperity through social learning in the cooperative sector: 25 years of experience from organic agriculture in Spain.* Land Use Policy, 54, 85–94.

De Los Ríos, I., Rivera, M., Knickel, K., Chebach, T., Qvist, D., Ashkenazy, A., & Šūmane, S. (2015). *Rethinking rural prosperity: a discussion of empirical data derived in seven countries with the "Working with People" approach.* XXVI European Society for Rural Sociology Congress (p. 136.137).

FAO. (2012). *Gobernanza responsable de la tenencia.*

FAO. (2013). *Los efectos diferenciados de la liberalización comercial en Chile sobre zonas rurales en la Región de O ' Higgins y la Región de la Araucanía.*

FAO. (2014). *Reflexiones sobre la concentración y extranjerización de la tierra en América Latina y el Caribe.*

Forest Policy and Economics. (2013*). Forest conflicts : A growing research field.*

Forest Policy and Economics, 33, 3–7.

Gerber, M., Carvacho, H., & González, R. (2016). *Development and validation of a scale of support for violence in the context of intergroup conflict (SVIC): The case of violence perpetrated by Mapuche people and the police in Chile.* International Journal of Intercultural Relations, 51, 61–68.

Pais Mapuche. (2013). Retrieved on April 5, 2017 from www.paismapuche.org/?p=8080

Palmer, D., Fricska, S., Wehrmann, B., Augustinus, C., Munro-faure, P., Törhönen, M., & Arial, A. (2009). *Towards Improved Land Governance.* Land Tenure Working Paper n°11 United Nations Human Settlements Programme.

Pineda, C. (2014). *Mapuche: resistiendo al capital y al Estado. El caso de la Coordinadora Arauco Malleco en Chile. Latinoamérica.* Revista de Estudios Latinoamericanos, 59, 99–128.

Weftun. (2016). Retrieved on March 26, 2017 from www.weftun.org/COMUNICADOS

FINANCIAL PERFORMANCE AND THE BUSINESS RISK IN AGRICULTURAL SECTOR OF ROMANIA

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Abstract
This study has as main objective the explanation of the relationship between the financial performance and the factors that can be found within the microeconomic environment of the companies and determine the risk occurrence. The research is conducted on Romanian agricultural holdings from the vegetable sector, taking into account the period 2009-2014. The results of regression analysis indicate that the farm performance is largely influenced by various business risk factors, of which the most important are the financing structure (financial risk) and sales effectiveness (commercial risk). The findings helped us knowing the risk generating factors in the agricultural holdings activity, to find solutions for a proper management that leads to increased performance.

Keywords: *financial performance, business risk, agricultural holdings, regression model..*

Classification JEL: Q12, Q14

1. INTRODUCTION

In a general sense, the risk is the deviation of the obtained result compared to the expected result, as a consequence of the action of various environmental factors [Bromiley, 1991]. The business risk determines the modality to fulfil the targeted objectives, as well as the magnitude of the favourable effects recorded inside and outside the company

The appropriate risk-taking and management ensure performance increase in the economic activity and satisfy the stakeholders' interests.

The research is mainly focused on highlighting how the interaction between performance and risk occurs within the agricultural holdings in Romania.

The research hypothesis is that the financial performance of agricultural holdings, expressed by the Return on Invested Capital, is influenced by a number of variables, such as: Return on Sales; Sales Variability; Debt to Asset Ratio; Working Capital to Expenses Ratio; and Fixed Assets Turnover Ratio. For analysis, we used a linear regression model to test the intensity of correlation between the specified variables.

There are various economic micro-environment factors affecting the performance that can be correlated with the risk events: the magnitude of profits and the liquid assets of a company [Tehrani et al. 2012], the technical-productive potential given by the tangible

assets and the efficiency of using it [Rus et al., 2016], financial structure [Akintoye, 2008], financial leverage [Ryan, 2008], the managers' behaviour and the risk taken [Bromiley, 1991]. The variability of sales and marketing activities [Lane, 2011].

2. RESULTS AND DISCUSSIONS

The dataset used in this study comes from the annual financial statements of the companies operating in the agricultural vegetable sector in Romania, based on the following NACE code: 0111 - Growing of cereals (except rice), leguminous crops and oil seeds [www.date-financiare.ro]. The data includes financial indicators for the period 2009-2014, for a total of 57 companies.

The relationship between performance, expressed by *Return on Invested Capital*, and a number of variables that introduce various possibilities of risk occurrence and manifestation, has the following form:

$$ROIC_{it} = a + b_1 WCE_{it} + b_2 DAR_{it} + b_3 SVAR_{it} + b_4 FAS_{it} + e$$

where: ROIC represents *Return on Invested Capital*; WCE is the *Working Capital to Expenses*; DAR is *Debt to Assets Ratio*; SVAR is the relative deviation of *Return on Sales* from the mean (sales variability); FAS is the *Fixed Assets to Sales*.

The obtained estimators are shown in Table 1.

Table 1. Regression results of business risk on financial performance

Variables	Dependent variable: Return on Invested Capital			
	Coefficients	Std. Error	z-Statistic	Prob.
WCE Working Capital to Expenses	-0.011011	0.004026	-2.914011	0.0014
DAR Debt to Assets Ratio	-0.087091	0.012239	-6.723624	0.0000
SVAR Sales variability	0.025060	0.000559	44.04126	0.0000
FAS Fixed Assets to Sales	-0.010635	0.001175	-9.741653	0.0000
C	0.111296	0.004838	23.00371	0.0000
Adj.R^2	0.641258			

Source: own calculation

The regression results show that, for the analysed group, the variables that can be associated with the business risk had an influence on the financial performance, which corresponds to the economic theory that there is a positive correlation between risk and return.

3. CONCLUSIONS

In this paper, a significant relationship between the financial performance and a number of internal risk-related variables has been highlighted, taking into account the Romanian agricultural holdings. The results of the regression analysis are underlying the formulation of action plans for increasing the economic performance.

One possibility to improve the economic and financial situation of the agricultural holdings is to improve the working capital management. Otherwise, the excessive

indebtedness increases the financing costs, leading to more risky structures and lower gains, case identified within the studied group. The inverse relationship between liquidity and performance, evidenced by the analysis results, indicates that the agricultural holdings should aim for a compromise (trade-off) between the values of the two indicators. Another way to increase the performance is the adequate management of the fixed capital. The sales effectiveness is another factor that positively influences the performance.

The study conducted in the vegetable sector of Romanian agriculture highlighted specific aspects about the internal risk factors facing the agricultural holdings. During operation, the risk is a continuous presence affecting their financial security [Burja and Burja, 2013].
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REFERENCES

1.   Akintoye I.R., *Sensitivity of Performance to Capital Structure*, European Journal of Social Sciences, Vol. 7, No.1, 2008

2.   Bromley P, *Testing a causal model of corporate risk taking and performance*, Academy of Management Journal, Vol. 14, No.1, 1991

3.   Burja C., Burja V., *Entrepreneurial Risk and Performance: Empirical Evidence of Romanian Agricultural Holdings*, Annales Universitatis Apulensis Series Oeconomica, Vol.15, No.2, 2013

4.   Lane N., Strategic Sales and Strategic Marketing, Taylor & Francisc, 2011, p.111

5.   Rus L., Belenesi M., Gherai DS., *Accounting, Analysis and Auditing of Information Regarding Tangible Assets in the Romanian Economic Entities*, Annales Universitatis Apulensis Series Oeconomica, No.18, Vol.2, 2016

6.   Ryan, K., *Financial leverage and firm value*, Gordon Institute of Business Science, University of Pretoria, 2008

7.   *Tehrani R*., Mehragan MR., Golkani MR., *A Model for Evaluating Financial performance of Companies by Data Envelopment Analysis*, International Business Research, Vol.5, No. 8, 2012

DEMOGRAPHIC CHANGES IN FRONT OF THE SUSTAINABILITY OF PENSION SYSTEMS. ALTERNATIVES FOR ROMANIA

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Abstract
Sustainable development in the field of demographic changes takes into account the impact of ageing on the future pensioners. All over the world, the demographic tendencies indicate that the population ageing trend has developed into a major problem, affecting the sustainability and viability of the public pension. In Romania, the demographic problem has become one of national security as well. Thus, the main objective of this study is to examine to what extent the alternative for facultative pension funds in Romania, the 3rd pillar, is both efficient and sustainable. Accordingly, the paper analyses the weighted rate of return of all voluntary funds in relation to their net assets. Faultily, at a subjective sight, it can be considered that, when assets increase, their profitability increases as well and vice versa. As main research methodology applied are the models of Snedecor-Fisher Test (F-Test) and Student Test (T-Test), for each category of pension funds' risk level: high and medium. The paper highlights current issues, which will worsen within the following years, though it represents a gain for the scientific community.

Keywords: demographic changes, pension difficulties, sustainability, voluntary pension funds, quantitative methods

Classification JEL: C82, H75

1. INTRODUCTION

Population ageing and the current problems in the systems of pensions have become an intricate subject for a series of research studies and analyses, while numerous alarming scenarios have been carried out, addressing both the authorities in view of applying some prevention measures and the population, aiming at seeking the most appropriate alternatives to counteract these problems.

According to the Eurostat estimates, Romania's population will decline within the period 2010-2060 and will record the fourth percentage decrease within the EU (-19.35%), after Bulgaria (-26.9%), Latvia (-25.6%) and Lithuania (-19.6%). Also, in terms of elderly dependency rate, Romania will be among the countries with the highest demographic pressure in Europe (European Commission, 2015, p. 329).

Since the direct effects of population ageing, within the context of an ever decreasing number of active employed population, could lead to the decrease of pension funds (their assets), we have sought to investigate the specialised literature, focusing on the correlation established between the funds' assets pensions and profitability. Faultily, at a subjective sight, we could generalize that, when assets increase, their profitability increases as well and vice versa.

In line with mainstream literature, Chen (2004) examines the correlation between the size (measured by total net assets) and the performance of the American mutual funds. Thus, the author highlights the inversed relationship that is established between the size of mutual funds (similar to the pension funds through their diversified placements) and their performance, which they motivate due to the low liquidity of the assets in the portfolio. A similar explanation for the inversed connection between the dimension and the performance in terms of liquidity is provided by Yan (2008, p. 741-768). At the same time, Chan and others (2009, p. 73-96) set an inversed causal relationship between the dimension and the performance of the Australian pension funds, which the authors explain via the high transaction costs of the large funds.

With fewer employees to support each pensioner, an inevitable crisis for the Pay-As-You-Go public pension type is foreseen. An alternative to complement the public pension remains the private pension component. As part of the 2nd Pillar, the privately managed pension component is also directly influenced by population ageing, while 3rd pillar of voluntary pensions remains the most feasible alternative.

Within this context, the main objective of the present research paper is to investigate to what extent the alternative for voluntary pension funds, i.e. the 3rd pillar, in Romania, is both efficient and sustainable in the short and long-term. Thus, we shall carry out a close analysis of the profitability for all voluntary funds in relation with their net assets. As main research methodology we have applied the models of Snedecor-Fisher Test (F-Test) and Student Test (T-Test) for the two qualitative variables: the weighted rate of return for all voluntary funds and the net assets. We used monthly data, distinctly for high and medium level of risk funds. Further, we aimed at presenting a description of the data input for the models, the methodology and the results obtained, thus drawing up the main conclusions.

2. DESCRIPTION DATA AND METHODOLOGY

According to data provided by Financial Supervisory Authority (FSA) in Romania, on the 27th of January 2017, there are currently a total number of 8 authorized administrators of voluntary pension funds; they have launched 10 voluntary pension funds on the market (IIIrd pillar). Voluntary pension funds are classified according to the three levels of risk: high, medium or low. Of a total of 10 funds, 2 funds register a *high level of risk (dynamic)*, while 8 funds have a *medium level of risk*. Presently, there is no *low-risk voluntary pension fund* registered, as these funds have merged with other funds indicating a medium level of risk.

For the analysis we have used the data provided by the FSA, as follows: weighted rate of return for all voluntary funds, for medium and high level of risk, marked with **Y, as independent variable**, for the period June 2009-April 2015, namely August 2010 - April 2015 (fig. no. 1); net assets of the voluntary pension funds for medium and high level of

risks funds, marked with **X, as dependent variable**, for the period June 2009 - April 2015, namely August 2010 - April 2015 (fig. no. 2).
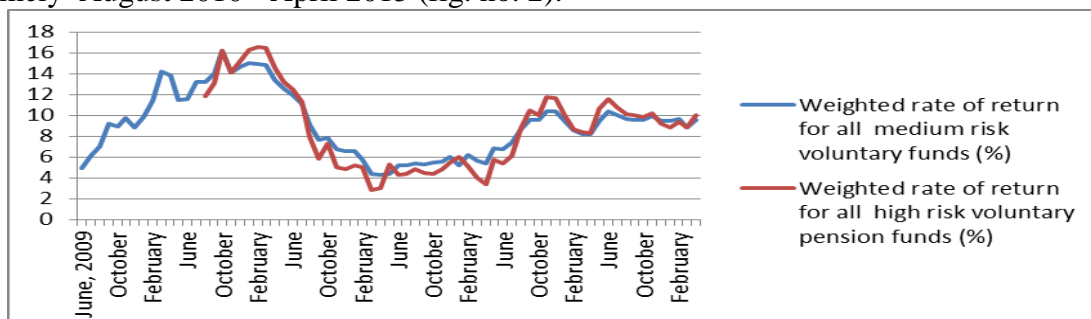
Fig. no. 1. The weighted rate of return for all voluntary funds, 3rd Pillar, in Romania, for medium and high levels of risk, period June 2009-April 2015
Source: Own processed data, under those published on the web-site of FSA,
http://www.asfromania.ro/informatii-publice/statistici/statistici-pensii/evolutie-indicatori

Net assets of voluntary pension funds registered an upward trend, reaching a higher rate for the funds with an average risk, than those with a high risk (Fig. no 2). The explanation comes within the context the population's risk aversion and its preference for a balanced portfolio of investments.
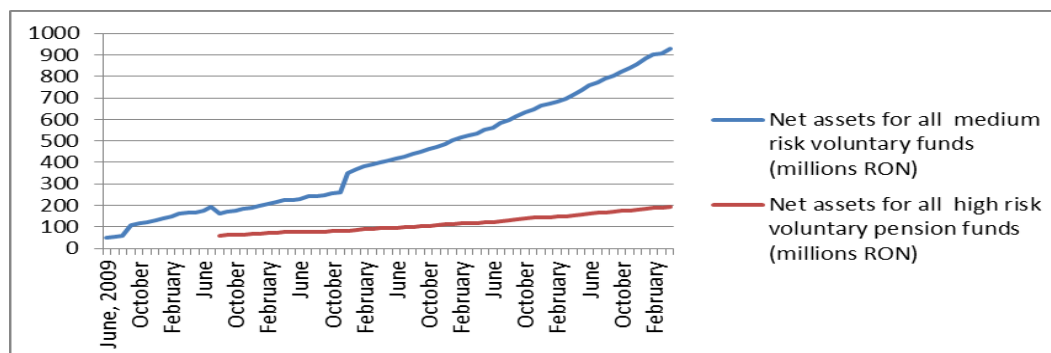
Fig. no. 2. The evolution of the net assets for all voluntary funds, 3rd Pillar, in Romania, for medium and high levels of risk, period June 2009-April 2015
Source: Own processed data, under those published on the web-site of FSA,
http://www.asfromania.ro/informatii-publice/statistici/statistici-pensii/evolutie-indicatori

For our input data, we have used the regression models, i.e. for each component of voluntary pension funds (dynamic and medium), for the two qualitative variables. Under the hypothesis of a normal distribution of coefficients and of errors, two approaches can be applied: **the Student Test** (T-Test) and **the Snedecor-Fisher Test (F-Test).**

As provided below, for the linear regression model, **one of the hypothesis is based on the above mentioned normality of errors**. This hypothesis is necessary due to the definition of Student, respective Snedecor-Fisher random variables. In fact both are ratios between two independent random variables: first one involves a standard normal at numerator and a chi square random variable at denominator, and the second one involves two chi square random variables.

The Student test is used for testing the individual significance of each parameter of interest (Jula and Jula, 2010; Voineagu and others, 2006). It is used in econometric literature for testing the significance of each parameter of linear regression.

The Snedecor-Fisher test is used for testing the overall significance of a group of parameters. For instance, this test is used for Granger causality test (Jula and Jula, 2010), where the null hypothesis establishes that all the regression coefficients of X_{t-1}, X_{t-2},.... in the expression of Yt are equal to zero. In this case we say (Jula and Jula, 2010) that X is not a Granger cause for Y (current value of Y does not depend on the past values of X). The way this test works is to compare the model of Y depending on its past values and the past values of X, and the model of Y depending only on its past values. The Snedecor-Fisher statistics is the ratio of the variances of errors of the two models, taking into account the numbers of degrees of freedom. Due to this expression of the Snedecor-Fisher statistics, the Snedecor-Fisher test is used generally if we want to test if two models are the same.

In the case of Goldfeld-Quandt homoskedasticity test (if the errors are in the same range), we test in fact that two regression models are the same (Jula and Jula, 2010; Voineagu and others, 2006): first with all *n* points, and second with one regression hyper-plane for the first n_1 points and one regression hyper-plane for the last n_3 points (the *n* points are divided in three parts, with n_1, n_2, respectively n_3 points).

In the case of variance analysis (Văduva, 2004; Voineagu and others, 2006), we have multi-indexed data. To test if an indice is necessary, we remove it by computing the averages on this indice (considering the other indices fixed), and we compare the variance of the obtained data to the variance of initial data.

The explanatory variables used in linear regression can be independent of some groops, or qualitative variables (Jula and Jula, 2010), where the values of X_i depend on the group the point belongs to. In this paper we will test the significance of the coefficients of such explanatory variables.

Since we usually obtain several qualitative variables, we have also put forward a Snedecor-Fisher test, considering **two models:**

- 1st Model with all the qualitative variables (the modified model), for the dynamic and medium pension funds in two classes;

- and *the 2nd Model, without the qualitative variables* (the basic model), for the dynamic and medium pension funds in a single class.

3. RESULTS AND DISCUSSIONS

For both tests, Student and Snedecor-Fisher, we have indicated the statistical results (table no. 1 and table no. 2).

Table no. 1. The statistical results for the voluntary pension funds, 3rd pillar, dynamic and medium

Value	Dynamic Funds	Medium Funds
Expectation of X	289.82306	428.3027
Variance of X	60873.05567	65440.95633
Expectation of Y	8.97534	9.14512
Variance of Y	11.69541	9.48591
Covariance X and Y	−82.79236	-191.75242

Correlation X and Y	−0.09812	−0.24338

Source: Own processed data under C++ program

As indicated in table no. 1, we can see that, **there is an indirect correlation between the variables**, both for the medium funds, and for the dynamic ones, which means when the weighted rate of return increases, the net assets decreasing, and vice versa.

Table no. 2. The regression models for the medium and dynamic voluntary pension funds, using the Snedecor-Fisher Test (F-Test) and the Student Test (T-Test)

Value/equation	Dynamic and medium pension funds in two classes - 1st Model	Dynamic and medium pension funds in a single class - 2nd Model (without D and X$_2$)
Linear regression	$Y = 9.73985 - 0.00832 \cdot X_1 + 0.66027 \cdot D + 0.00539 \cdot X_2$	$Y = 9.36952 - 0.00136 \cdot X$
Variance of residues	11.66483	11.76666
Variance-covariance matrix	$\begin{pmatrix} 2.03048 & -0.01556 & -2.03048 & 0.01556 \\ -0.01556 & 0.00013 & 0.01556 & -0.00013 \\ -2.03048 & 0.01556 & 2.65532 & -0.01664 \\ 0.01556 & -0.00013 & -0.01664 & 0.00013 \end{pmatrix}$	$\begin{pmatrix} 0.00171 & -3.41933 \cdot 10^{-6} \\ -3.41933 \cdot 10^{-6} & 1.1798 \cdot 10^{-8} \end{pmatrix}$
Correlation matrix	$\begin{pmatrix} 1 & -0.94827 & -0.87446 & 0.93942 \\ -0.94827 & 1 & 0.82922 & -0.99067 \\ -0.87446 & 0.82922 & 1 & -0.87825 \\ 0.93942 & -0.99067 & -0.87825 & 1 \end{pmatrix}$	$\begin{pmatrix} 1 & -0.76145 \\ -0.76145 & 1 \end{pmatrix}$

Source: Own processed data under C++ program

In Table 2, X_1 represents the net assets of the voluntary pension fund, dynamic or medium, D is a dummy variable having the value zero for dynamic funds and one for medium funds, and X_2 is a qualitative variable, having the value zero for dynamic funds and X_1 for the medium funds.

Applying the Snedecor-Fisher Test, if we estimate Y, the weighted rate of return for all voluntary funds, using the above two regression equations, the correlation between the two sets of values is 0.53385. The F statistics is 1.53657, which is lower than the quantile of the Snedecor-Fisher distribution with 2 and 126 degrees of freedom and error 10%, 2.33416. Monte Carlo generates F(1.53657)=0.7804, Simpson generates F(1.53657) = 0.77838. The error of 1st rang (probability of being wrong saying that we have two classes, when in fact it requires a single class) is 1-F(1.53657), higher than 0.2. So, *we accept the null hypothesis of a single class*.

Within **the Student Test,** the statistics for the variables D and X$_2$ are 0.40519, namely 0.4635, lower than the materiality threshold of 0.5. We then compute the *quantile of 10%* for the Student Test variable with 126 degrees of freedom (base model with two classes of funds), similarly to the Snedecor-Fisher test, where via the Runge-Kutta method is 1.28831, and via Monte Carlo method is 1.29214, shows higher values than the Student statistics student.

The conclusion is also that we have a single class, very little inclination to 2 classes (but not sufficient, because F is lesser than the quantile). The distribution function is higher than the error, but the error is not more than 5%, Fisher's threshold - or at least 10%. Subsequently, the **null hypothesis, in our case, a single class of funds is true.**

As established following our research, the correlation value reveals that **there is a causal relationship between the weighted rate of return and their assets, being appreciated as higher than the average influence** (0.53385).

For a short period of time, if all circumstances are maintained, the correlation between the variables indicates that: when the assets register a decreasing trend (due to the decreasing number of contributors), the weighted rate of return has an increasing trend. Of course, the increase of return for smaller assets is in relative terms. In absolute amounts, the return is higher for high assets.

4. CONCLUSIONS

With regard to the causality relation between the size of the private pension funds and their performances, the *results of this study are similar to those obtained at an international level*, i.e. reverse causality correlation can be established between the dimension of the pension funds and their performances, a (Chen, 2004; Chan and others, 2009; Yan, 2008; Pollet and Wilson, 2008). As advocated by Chan and others (2009), a cause of the reversed influence of the funds' performances depending on the assets' value is explained by the funds' possible high costs of transaction.

Therefore, empirical tests are consistent, with similar results obtained by other researchers. The paper highlights current issues, which will worsen within the following years, though it represents a gain for the scientific community. To avoid the growth of the precarious situation of the future pensioners in Romania, the individuals have to grow aware of the current situation, while seeking to find different ways of investments.

REFERENCES

1. Chan, H.W.H., Faff, R.W., Gallagher, D.R., Looi, A., Fund Size, Transaction Costs and Performance: Size matters!. *Australian Journal of Management,* 34(1), 2009, pp. 73-96.
2. Chen, Y., Rural pension: design and argument for a new scheme. *Academic World, 5,* 2004.
3. European Commission, *The 2015 Ageing Report, Economic and budgetary projections for the 28 EU Member States (2013-2060), 3*, 2015.
4. Jula, N., Jula, D. (2010). *Modelare Economica: Modele econometrice şi de optimizare*. Bucharest, Romania: Mustang.
5. Pollet, J. M., Wilson, M., How does size affect mutual fund behavior?. *The Journal of Finance, 63*, 2008, pp. 2941–2969. doi:10.1111/j.1540-6261.2008.01417.x.
6. Văduva, I., *Modele de Simulare*. Bucharest, Romania: University of Bucharest, 2004.
7. Voineagu, V., Titan, E., Serban, R., Ghiță, S., Todose, D., Boboc, C., Pele, D., *Teorie si practica econometrica*. Bucharest, Romania: Meteor Press, 2006.
8. Yan, X., Liquidity, investment style, and the relation between fund size and fund performance. *Journal of Financial and Quantitative Analysis*, *43*(3), 741-767, 2008, doi: http://dx.doi.org/10.1017/S0022109000004270.

THE TYPOLOGY OF THE STRATEGIES ARE USED IN THE FINANCIAL-BANKING SECTOR

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Abstract

The complexity of the financial-banking services, the nature of the continuous and the existence of the if in the delivery of the services has extremities which favor the development of relations in the financial-banking sector. Increase competition by entering in the sector of the financial multinational companies, but toilette other competitors, fast how does developments in the development of technology in the field of distribution and communication, and the frequent changes make it to switch-on the development of a rebellious strategic, in which the maintenance and development of the relations with the specials to become a corporate value.

As a result of limited resources or insufficient to serve, in an efficient way, all consumers within a geographical area, banks have began to develop marketing strategies orientated toward specific segments of customers, characterized by a high degree of profitability in the long term.

The development of the strategy the market involves the carrying out of a process which includes essential steps: Defining the strategic context in which the institution a financial-banking business is carried on environmental analysis of marketing the internal and external company, setting the objectives in accordance with its own advantages and opportunities in the sector, such as businessmen and sizing budget necessary with a view to the completion of them.

The definition of the attitude of the bank or of the insurance undertaking to customers, competition and other potential partners involves a process of selection of the variants optimal considered by the company of several possible options which are grouped under some models recognized by the specialized literature, that: strategies developed market in the framework of the Ansoff model, strategies developed market in the framework of the model Porter, strategies for the market of the results of the analysis of the structure of the market, strategies adapted to market the competitive context in which it operates financial and banking institutions.a

Keywords: strategy, banks, the market, competition, model

Classification JEL: G21

1. INTRODUCTION

There are various approaches to the concept of strategy. Igor Ansoff Ansoff (1984) considers that the firm must identify the sector in which the place, select a line of conduct specific, to complete the objectives and to choose the more convenient occasions to develop them. Henry Mintzberg(Mintzberg, 1990) identifies the five definitions of the strategy: a perception which denotes a predetermined course of action in order to resolve a situation, a sketch or a project which consists of a maneuver aimed to exceed a competitor or an opponent; a model witch establishes a structure of actions validated on behavioral plan; the positioning of the firm what lies in the means of identification of the place of the

organization on the market; the levying of the strategy that a perspective that imply both the fixing of a position and a perception of the reality of what is reflected in its actions aimed at the market, technology.

Michael Porter has an important contribution in the field of strategic goal, through the use of the word ,,generic strategy", that the statement of the fundamental approaches required to obtain competitive advantage, analyzed in correlation with the competition on the market.

Herve of Carmoy (Carmoy, 1988) consider that the banking strategy as being ,,the refusal of the deviation", signifying the importance of the changes made in the banking sector, world technical progress in the field of financial activity.

2. THE FACTORS WICH INFLUENCING THE STRATEGIES OF PRODUCT

The factors with significant impact on the strategic alternatives in the financial-banking sector are:
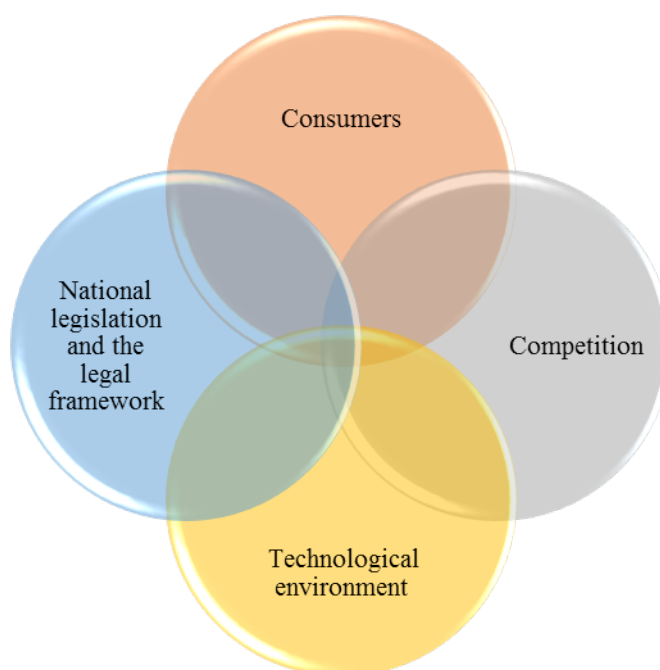
Figure. no. 1 ,,The factors wich influencing the strategies of product"

Consumers: must be taken into account current of the financial institution or bank charges that continues to meet a basic need of the consumer, but which have become outdated, modernize them.

Competition: constitutes an important source of information.

The technological environment: has a significant influence on the development of products and on the timing strategies.

National legislation and the legal framework: have a decisive impact in the development of the financial.

3. THE MARKET STRATEGIES DEVELOPED IN THE FRAMEWORK OF THE ANSOFF MODEL

Ansoff model involves the strategies of growth or development of an undertaking by grouping them into four major categories. In the definition of the strategy to maintain its market share, the organization the financial-banking you have to decide whether will focus on current or if you develop new products, the concomitant with the judgment of the visa requirement, markets existing or to address new markets. The variants possible strategic will consist in:
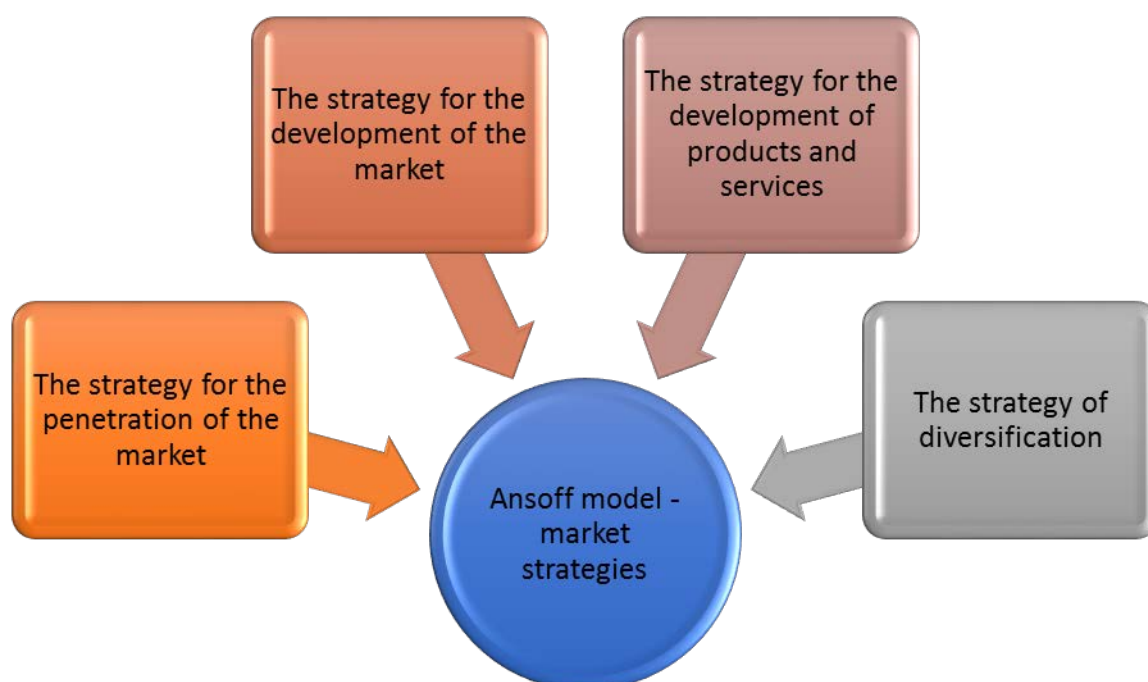
Figure no. 2 ,,Market strategies developed in the framework of the Ansoff model"

The strategy for the penetration of the market pursues the achievement of the objective of increasing sales for products and services of the current on the markets of the current by making current customers to use more often services of the organization or to appeal to the new services, reducing the migration of customers to other institutions financial-banking and attracting new customers from among the non-users or from among the customers of competing undertakings.

The strategy for the development of the market involves on the part of the financial-banking efforts for the sale of the products and services of the current on new markets. This objective can be achieved by entering the organization in the framework of new geographical areas, by addressing of new market segments or by the discovery of new uses for the products current.

The strategy for the development of products and services consists in the development of financial products which would be sold on the markets of the current.

The strategy of diversification has the advantage, the relatively low level of market risk faced by the institution of the financial and banking. This strategy involves the provision of new products and services on new markets.

4. CONCLUSIONS

Regardless of the strategy of the market for which will choose the institution a financial-banking, it must take all efforts in order to attain the objectives set out in accordance with the following principles:

- the creation of innovative products, alternative channels of distribution and a brand name;
- the deployment of differentiated activities in the framework of specific approaches, in order to remain competitive on each market segment served;
- the flexibility in building and alliances cooperative structures with the players of the market which have a consolidated reputation in the sector of activity;
- modernization or upgrading the organization on a national level in order to be able to adjust to the changes in the framework of the business environment.

In conclusion, it is necessary that the organizations in the banking sector to build the strategies of the market trying to avoid the threats from the new entrant on the market. At present the banks have strong positions is the markets on which serve them as favorable prerequisites maintaining finsnciare relations with customers profitable, provided the development of a strong guidance to the consumer.

REFERENCES

Bistriceanu G., „Noțiuni bancare fundamentale", Editura Economică, București, 2014;

Moinescu B., Codirlasu A., „Strategii și instrumente de administrare a riscurilor bancare", Editura ASE, București, 2009;

Rădoi M.A., „Managementul produselor și serviciilor bancare", Editura Economică, București, 2009;

Spulbăr C., „Management bancar – ediția a II-a", Editura Sitech, Craiova, 2008;

Străchinaru A.I., „Fundamentarea deciziilor financiare", Editura ASE, București, 2016.

THE COST OF PRODUCTION AND ECONOMIC PERFORMANCE IN ROMANIAN ENERGY MINING INDUSTRY

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Abstract
In this study we propose further research on the issue of cost calculation and determination of the production cost of coal in the organization under review. This study uses the traditional approach in order to determine the unit cost per ton of coal mined, highlighting the spending structure so as to render an accurate and timely management organization method, in order to adopt the required measures. The research ends by establishing the differences between budgeted costs and the realized ones and analysis of the causes that led to the planned budget overrun.

Keywords: *Production cost, economic performance, coal, organization*

Classification JEL: M41, Q35, Q40, D24

1. INTRODUCTION

Enterprise development activities request to investigate the issue of production costs so as to implement within the organization responsibly optimal method of calculation of cost of production in order to reflect accurate and relevant costs necessary to obtain finite product.

Conducted research concludes outlining the methodology for determining the unitary cost of coal production to organization under review. In this situation the practical application starts with proper positioning of the organization within the branch of activity analyzed on a consolidated mining contributing to ensuring thirds of the electricity supply on the market. In this case it ensures the relevance of the present study by the fact that the subject of applied research is vital to ensure the security and energy independence of the country.

2. DETERMINING THE PRODUCTION COST OF COAL IN ENERGY MINING INDUSTRY

Unitary cost of production of coal within the organization analyzed it is obtained by dividing the total costs recorded in the accounting entity to total lignite mined.

In order to substantiate the analysis on determining the cost of production per ton of coal is required by emphasizing balance sheet items results of comparing the amounts realized on categories of results against the budgeted at the end of the last financial year, according to data submitted in Table 1.

Table no. 1 Calculation of unit cost of coal as traditional approach to organization analyzed (thousand RON)

Indicators	Planned	Accomplished
I. TOTAL INCOME	158.161	141.354
1. Operating income	158.161	141.357
a) of production sold	0	371
b) income from sale of goods	85	11
c) Domestic coal production immobilized	148.458	130.619
d) Investment in own capitalized production	8.017	9.589
e) other operating revenues	1.600	763
2. financial income	0	0,07
II. TOTAL EXPENSES	157.072	143.999
1. Operating expenses	156.046	143.588
A. Expenditure on goods and services	41.871	38.087
A1. Expenditure on stocks	29.629	27.779
A2. Expenditure on services provided by third parties	483	176
A3. Expenses other third party services	11.759	10.132
B. Tax expenses, taxes and similar	9.981	8.910
C. Expenses for employees	66.732	61.003
D. Other operating expenses	37.462	35.588
2. financial charges	1.026	410
III. GROSS PROFIT (profit / loss)	1.089	-2.645
COAL PRODUCTION OF OWN thousand tons	3.300	2.388

Source: own processing on the basis of the entity's accounting

We determine the production cost of coal based on the information from Table 2.

Table no. 2 Calculation of unitary cost of production to organization under review

Indicators	Planned	Accomplished
II. TOTAL EXPENSES	157.071,71	143.998,73
COAL FROM OWN PRODUCTION – thousand tons	3.300	2.388,33
The total unitary cost RON/ton	**47,60**	*60,29*

Source: own processing

After analyzing the data from Table 2 we can say that achieving within the organization analyzed lignite is achieved with a unit cost of 60.29 lei per ton above the level of 47.60 lei per ton budgeted. Exceeding budgeted unitary cost occurred due to difficult operating conditions determined by the structure of increasingly complex layers of coal.

3. CONCLUSIONS

The study assumed applied to the cost of production of coal (lignite) mining within the organization under analysis, basic component within the largest state owned enterprises in Romania.

Determining unitary cost of production to company analyzed conducted to appreciation of the economic performance for all activities effort and to show the current situation in mining. In this situation we appreciate the organization economic performance following a downward trend given the key results indicators. In order to increase economic performance both at the organizational level and at the level of activity we consider necessary to development and implementation programs for a coherent and consistent investment program to increase profitability by reducing unit costs to all involved in the work.

REFERENCES

1. Lauzel P., Contrôle de gestion et budgets, Editura Litec, Paris, 1995
2. Kustra A., Cost calculation in the mining activity treated as a project – strategic and operational approach, Mineral and Energy Economy Research Institute, Polish Academy of Sciences, 2008
3. Robare P., şi Bhagwat S, Cost of underground coal mining in Illinois, Illinois Geological Survey, 1982,
4. Ţegledi A, The cost – important element in the decision – making process of companies, Annals of the "Constantin Brâncuşi" University, Economy Series, 2014.
5. Heyne P. Şi alţii, Modul economic de gândire, Editura Bizzkit, 2011
6. Knigt F., , Risk, Uncertainty and Profit, Ed. Signalman Publishing, 2010
7. Frois G.A., Economie politique, Editura Economica, Paris, 1988.
8. Kowalska I.J., Turek M., Posibilities of improving the efficiency of mining companies by controlling costs of coal production, Equilibrium, Volume 6 Issue, 2011

EDUCATION, HEALTH AND FINANCIAL SECURITY - DETERMINANTS OF SUSTAINABLE DEVELOPMENT

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Abstract

The palette of the factors which are influencing the sustainable development is extremely varied. But in the current context, we believe that education, health and financial security have become increasingly determinant of it. As a result, the article analyzes the relation between the three elements and economic growth, based on the following indicators: birthrate, population as structure, employment and unemployment by instruction training (level of education), household income and the level of GDP per capita. The study is conducted at a sample of EU countries, for a large horizon of time, so as to highlight the potential lags in time registered between development of mentioned indicators and effects recorded in terms of economic growth.

Keywords: sustainable development, education, health, financial security

Classification JEL: I15, I25, I32

1. INTRODUCTION

The concept of sustainable development is not much new. The European Commission report 1987 (Brundtland) ,,Our Common Future" has represented the defining context of sustainable development (WCED, 1987). Thus, it is considered that sustainable development involves meeting the needs of the present without compromising the possibility to meet the needs of future generations. According to this definition, subsequent approaches have identified three essential components of sustainable development: economic, social and environmental protection. Basically, it believes that the strategic objectives of economic operators and individuals must be provided with a reasonable consumption of resources and protecting the environment. In other words, the negative impact of economic growth on the environment should be as small as possibleIn reality, things are not that simple. Sustainable development strategies are not readily accepted by profit-seeking companies. In addition, a central objective of the macroeconomic policies promoted by the authorities is economic development. So, it is obvious that the principles of sustainable development do not entirely overlap with those underpinning economic development. In fact, Agenda 21, adopted at the Rio de Janeiro Earth Summit (1992), includes the principles to be respected by nations in choosing the type of economic development as well as references regarding the role of local authorities in policies promoted nationally. Another important aspect is that relating to the protection of the environment. The legal regulations adopted at the European level have been an important

step in reducing the pollution caused by the activity of economic operators, but it is obvious that concerted action is needed in the worldwide, since the space dimension is excluded in this domain in many cases. The Lisbon Strategy has focused on the environmental component but the effects of social and environmental policies have not been what they expected (Comhar, 2010). The Europe 2020 strategy has proposed five major targets that can generate sustainable development, three of which are related to the population, both in terms of employment and education and poverty. In this context, the paper aims at identifying the correlation between education, employment and financial security, on the one hand, and the level of gross domestic product on the other. In this respect, a data set for 11 years (2005-2015) was used for 5 countries (Bulgaria, Czech Republic, Hungary, Poland, Romania), and a comparison was made with the European average.

2. DETERMINANT FACTORS OF SUSTAINABLE DEVELOPMENT

The principles of sustainable development can not be respected if the cumulative action of a set of factors is not taken into account. We believe that it is absolutely necessary to pay particular attention to education, health and financial security, which can ensure a beneficial future development for any nation. The collected data shows a number of issues: the employment rate is generally higher among the population with a high level of education (ISCED 5-8), with a European average of 82.7% in 2015; There is a tendency to reduce those with a higher level of education (ISCED 3 and 4) and slight increases or reductions at levels 5-8; The unemployment rate recorded significant fluctuations over the analyzed period, but the impact of the economic crisis was different for the countries under consideration (whether it increased significantly, as in the case of Hungary, or decreased in the case of Poland); the distribution of revenues, analyzed by Gini's coefficient, highlights the fact that Romania has the highest inequality in the analyzed sample (37.4% compared to 25% in the Czech Republic or 28.2% in Hungary), followed by Bulgaria with 37%; in Romania and Bulgaria, GDP per capita is well below the other countries and below the European average. In the extended work, data processing will be done with the help of SPSS by applying multi-factorial linear modeling.

3. CONCLUSIONS

Correlated analysis of data highlights contradictory aspects that may result from the action of a set of factors that can not be accurately quantified or of the policies applied in each country, but also logical conclusions. Thus, in countries with a high GDP per capita, there is a tendency to reduce the population entering a training system (Czech Republic, Poland). The birth rate is not correlated with the GDP per capita or the phases of the economic cycle. Instead, the level of employment has increased in relation to the level of training, which requires concerted action by the authorities in each country to reduce school dropout and involvement in a training system for as many people as possible.

REFERENCES

1. World Commission on Environment and Development (WCED). Our common future. (Oxford University Press, 1987);

2. Comhar (Sustainable Development Council), "European Commission Working Document Consultation on the Future "EU 20" Strategy", Comhar Sustainable Development Council (Ireland) Comments, 2010.
3. www.ec.europa.eu

THE ROLE AND THE IMPORTANCE OF THE "ROTATION SPEED" INDICATOR

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Abstract

The rotation speed of assets and liabilities is one of the most important indicators used in the management of a company's assets and liabilities, and in economic practice it can be expressed by the number of revolutions and the duration of rotations.

The rotation speed indicates the efficiency with which assets and liabilities of a company are administered, so that the trader is made to take decisions regarding the use of the means at his disposal in order to obtain the best results. The rotation speed is used by the company's management in order to write the analysis of indicators of capital assets, of circulating assets and of debts and obligations to suppliers. All these indicators have the turnover as a common element used both in determining the number as well as the duration of rotations.

The purpose of the approach of this theme is to highlight the role and importance of the rotation speed in a company's activity, considering the speeding up and slowing down of the rotation speed, both situations resulting in different effects on the performance indicators. From a methodological point of view, the rotation speed shall be implemented using the method of rotation rates expressing synthetically the efficiency with which assets and liabilities are used and managed.

Keywords: *rotation speed, turnover, total assets, number of rotations, duration of a rotation, efficiency*

Classification JEL: *D6*

1. INTRODUCTION

The speed of rotation is one of the most important indicators of management and plays an important role in filling the frame of financial statements and helps appreciate the efficiency of the use of assets and liabilities.

The speed of rotation of circulating assets an important indicator of efficiency and reflects the changes that have taken place in the activity of the firm (especially in the exploitation activity). (Robu, 2014)

The speed with which capital advanced in a firm's business passes from a functional form to another profitably completes with each rotation. It is expressed either by number of rotations in a given period (semester, year) or by duration in days of a rotations. The

number of rotations or rotational velocity coefficient of capital (kr) is calculated by reporting turnover made by the company in a given period (CA) to the average balance of capital (Km). The duration of a rotation expressed in days (dr) is determined by dividing the number of days of the given period (T) to the number of revolutions. The rotation speed of the circulating assets also depends on various factors, such as: the peculiarities of production processes in different branches and sectors of activity, physical capital structure, productivity of the use of production factors, the producation duration of goods and the value of their collection etc. In all sectors of economic activity, the speed of rotation of circulating assets is an important method of increasing the economic efficiency of enterprises, which is done by its acceleration. (www.cursdeguvernare.ro)

2. PAPER BODY

The rotation speed of current assets is "one of the most important synthetic qualitative indices characterized by using the rotation rates of balance sheet items. To fully assess the usability degree of the current assets balance alone is not enough. There is a need for analytical data represented by turnovers in different accounts found in the balance indicators, using the analytical trial of receivable balance accounts. Accelerating the speed of rotation of current assets has direct favorable effects on performance indicators (benefit and rate of return), its being reduced negatively influencing the company performance". (Hada, 2014)

The rotation speed of the circulating assets correlates turnover or one of its components to total assets current assets or to a particular element. The rotation speed of circulating assets can be expressed as: (Hada, 2014)

▪number of rotation (n):

$$n = \frac{CA}{\overline{AC}} \qquad (1)$$

where:

$\overline{AC}$ - average balance of circulating assets;

$$\overline{AC} = \overline{St} + \overline{Crc} \qquad (2)$$

where:

$\overline{St}$ - the average value of stocks;

$\overline{Crc}$ - the average value of claims (corrected for value added tax if applicable).

In this case the rotation speed expresses the number of rotations of the average balance of circulating assets held for the realization of turnover. The higher the number of revolutions, given that it liberates profit from the work done by the firm, the more efficienct the use of circulating assets utilization, because the same amount of current assets is achieved by means of a higher turnover and hence a higher profit.

▪duration in days (Dz):

$$Dz = \frac{\overline{AC}}{CA} \cdot T \qquad (3)$$

where:

$\overline{AC}$ - average balance of circulating assets;

T- number of days related to the period analysed.

In this situation the size of the rotational speed of circulating assets expresses the average number of days required by circulating assets in the transformation and their availabilities in current assets. If: (Robu, 2014)

a) $Dz_1 \rangle Dz_0$ - the company's activity is characterized by slowing the speed of rotation of circulating assets, namely the growth in the number of days a rotations;

b) $Dz_1 \langle Dz_0$ - the company's activity is characterized by accelerating the speed of rotation of circulating assets, i.e. reducing the number of days of rotations;

In order to accelerate the speed of rotation of circulating assets it is necessary to ensure a dynamic turnover growth average balance superior assets current assets:

$$I_{AC} \langle I_{CA}$$

Speeding up or slowing down the rotation speed affects the size of the average balance of circulating assets.

Based on the above model, we can achieve a diagnostic analysis of factorial type of the rotational speed as follows:

The deviation of the phenomenon:

$$\Delta Dz = Dz_1 - Dz_0 = \left(\frac{\overline{AC_1}}{CA_1} \cdot T \right) - \left(\frac{\overline{AC_0}}{CA_0} \cdot T \right) = \pm days \qquad (4)$$

The influence of components:

1. The influence of turnover:

$$\Delta_{Dz}^{CA} = \left(\frac{\overline{AC_0}}{CA_1} \cdot T \right) - \left(\frac{\overline{AC_0}}{CA_0} \cdot T \right) = \pm days \qquad (5)$$

2. The influence of circulating assets average balance:

$$\Delta_{Dz}^{\overline{AC}} = \left(\frac{\overline{AC_1}}{CA_1} \cdot T \right) - \left(\frac{\overline{AC_0}}{CA_1} \cdot T \right) = \pm days \qquad (6)$$

2.1. The influence of medium-sized stocks: ($\overline{St}$):

$$\Delta_{Dz}^{\overline{St}} = \left(\frac{\overline{St_1}}{CA_1} \cdot T \right) - \left(\frac{\overline{St_0}}{CA_1} \cdot T \right) = \pm days \qquad (7)$$

2.2. The influence of stock average accounts receivable ($\overline{Cre}$):

$$\Delta_{Dz}^{\overline{Cre}} = \left(\frac{\overline{Cre_1}}{CA_1} \cdot T \right) - \left(\frac{\overline{Cre_0}}{CA_1} \cdot T \right) = \pm days \qquad (8)$$

We check by means of the following formulae:

$$\Delta Dz = \Delta_{Dz}^{CA} + \Delta_{Dz}^{\overline{AC}} \qquad (9)$$

$$\Delta_{Dz}^{\overline{AC}} = \Delta_{Dz}^{\overline{St}} + \Delta_{Dz}^{\overline{Cre}} \qquad (10)$$

On the basis of this analysis it is possible to find:

▪the duration in days of the rotational speed is influenced by two main factors: the turnover and average balance of circulating assets;

▪the average balance of circulating assets as the main factor is influenced in turn by two secondary factors: the average stock and the stock of claims.

3. CONCLUSIONS

The increase in turnover always attracts an increase in circulating assets, but the condition of ensuring a plus of efficiency is to increase of turnover in order to exceed circulating assets. The effective use of current assets is one of the ways of increasing profit and getting of new funds.

Addressing the rotational speed can be achieved from the following points of view:

a) in terms of the supply — meaning that the speed of rotation is the indicator that provides a normal production, elimination periods of stagnation and ultimately increasing production, reducing costs, etc.;

b) from the point of view of the production process, in the sense that any cost-saving circulating assets and any reduction in the length of the production cycle leading to accerlerarea rotational speed;

c) in terms of commercial activity, rotational speed puts his imprint in the process of selling and cashing of money on products sold in the rapid transformation of circulating assets in cash.

REFERENCES

[1] Anghel Ion (coordonator), Analiza şi evaluarea economico-financiară. Studii de caz, Ed. ASE, Bucureşti, 2016;

[2] Hada Teodor, Ionela Cornelia Cioca, Teodora Maria Avram, Daniela Ionela Dumitescu, Financial Management. Theory and Practice, (Alba Iulia: Aeternitas Publishing House, 2014), 229-234.

[3]Robu Vasile, Anghel Ion, Analiza economico-financiară a firmei, Ed. Economică, Bucureşti, 2014, pag.454;

[4]***http://cursdeguvernare.ro/dictionar-economic/viteza-de-rotatie-a-capitalului

ACCOUNTING TREATMENTS RELATED TO TRADE DISCOUNTS RECEIVED AND GRANTED - PREMISE FOR SUSTAINABLE DEVELOPMENT

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Abstract:
Sustainable development does not stop just to environmental quality but may be extended to all other areas, including the accounting, and can be expressed through the quality and accuracy of accounting treatments applied by entities. In this paper we debate about trade discounts received and given, in terms of accounting treatment, in accordance with applicable legal provisions. Accounting treatments will be analyzed for: commercial discounts received / given for stocks and property on the same invoice, partially or totally; commercial discounts received after the purchase invoice for services or stocks; commercial discounts received / given after the balance sheet date. It will also track the results and implications of these treatments.

Keywords*: received discounts, stocks, property, accounting treatment*

Classification JEL: M41

1. INTRODUCTION:

Every entity within economic activity gives customers trade discounts and receive trade discounts from suppliers. In this article we will focus both on the accounting treatment related to trade discounts received from suppliers and trade discounts granted, and on its impact on the business environment from Romania.

Accounting trade discounts received and granted, suffered a series of changes over time. The accounting treatment of sales rebates differ substantially depending on the time they are granted or received at the same time with the invoice or later. Currently the provisions of Order no. 1802/2014 (as amended by Order no. 4160/2015), but, in this paper, we will present the main amendments to Order no. 3055/2009 [2].

From 2010 up to the present, commercial discounts received after the invoice is highlighted with account 609 „Trade discounts received" with function liability account and for commercial discounts granted after invoicing using account 709 „Trade discounts granted", with function asset account.

2. ACCOUNTING TREATMENTS RELATED TO TRADE DISCOUNTS GRANTED

Legal provisions [3] not significantly changed compared to 2010, the most important issues are related to:

- accounting treatment related sales rebates granted on the same bill of goods and services: these cuts must reduce income from sales / services. Therefore, revenue will be reflected on a net basis;
- accounting treatments related trade discounts granted for goods after initial billing, namely:
  1. reducing adjusted income commercial sale when selling products and providing commercial reduction are combined or when further reduction bill referred to the initial invoice. In accounting, the adjustment will be reflected as a regular sale, but with amounts minus (both revenue and VAT);
  2. commercial reduction reflected separately in account 709 „Trade discounts granted" when selling products and providing commercial reduction are treated separately (bill later no mentions of the original bill which was granted trade discounts). Accounting formulas in this case are:

709 „Trade discounts granted"	=	**4111** „Customers" discounts granted

and

4111 „Customers"	=	**4427** „VAT collected" (VAT amount in minus)

- accounting treatment related to sales rebates granted after initial invoice for services: these cuts outlined in account 709 „Trade discounts granted".

3. ACCOUNTING TREATMENTS RELATED TO TRADE DISCOUNTS RECEIVED

The accounting treatment related to trade discounts received is different according to their kinds, namely [1]:

- trade discounts received from suppliers on the same invoice goods or services purchased;
- trade discounts received from suppliers invoice acquisition of 100% (especially for electronics phones and tablets nature in both cases: stocks or assets);
- trade discounts received from suppliers invoice after purchasing the stocks still in management;
- trade discounts received from suppliers invoice after purchase for stocks that are not still in management;
- trade discounts received for services after the initial invoice;
- trade discounts for tangible and intangible assets.

Accounting for all the accounting treatments mentioned above are shown in the light of

legal provisions in the form of a comparison between the existing force (according to the Order no. 1802/2014 and Order no. 4160/2015), and the previous (as Order no. 3055 / 2009).

Since trade discounts received from the supplier are many types, we will present the correct accounting treatment of these (taken individually), while highlighting the difficulties and implications on the economic situation and financial position.

For example, although at first glance, the accounting treatment of reductions accounting received the same bill seems easy (these trade discounts decreases the acquisition cost of assets recorded in purchase invoice), but in practice, especially for entities retail, it is quite complicated and difficult to operate and reduced cost of acquisition of each item of trade discounts received.

Another example is the accounting treatment for commercial discounts 100% purchase invoice, whether it is stocks or assets, meaning that in this case the goods shall be recognized at their fair value, while emphasizing the income corresponding to the stock purchased (the account 7588 „Other operating income" for stocks), respectively, for fixed assets, a subsidy for investments (original account 4758 „Other amounts received as investment subsidies"; then, while the amortized monthly, is will reflect the revenue account 7584 „Income from investment grants").

Depending on the type of entity or by tax entity owes to the state (tax and enterprises' income tax) may reveal further tax implications.

4. ACCOUNTING TREATMENTS RELATED TO RECEIVED OR GRANTED DISCOUNTS SUBSEQUENT TO THE BALANCE SHEET DATE

According to the national law [3] and international provisions [4], commercial discounts received or granted subsequent to the balance sheet date (the period between the end of the financial year and the date of approving financial statements) and are related to sales or purchases for the year just ended (the called rebate reductions) falls into the category of events resulting in adjusting events after the reporting period (it refers to transactions in the previous year). In this case, we have to proceed to the required adjustment to the amounts recognized in the financial statements, namely:

- for commercial discounts received are recorded:

    1. at the end of the recently year, the discounts received (excluding VAT):

408 „Suppliers – invoices to be received"	=	**%**	total discounts received
		3xx „Stock"	amount of the stocks held at the end of the year
		609 „Trade discounts received"	discounts exceeding stock held

2. at the date of invoice rebate:

401 „Suppliers"	=	**408** „Suppliers – invoices to be received"	discounts received

and

_____   *   _____

4426 „VAT deductible"   =   **401** „Suppliers"   (VAT amount in minus)
_____   *   _____

- for trade discounts granted are recorded:

_____   *   _____

709 „Trade discounts granted"   =   **4118** „Customers – invoices to   discounts granted
                                            be issued"
_____   *   _____
                                     *
_____   _____

4118 „Customers – invoices to be issued"   =   **4111** „Customers"   discounts granted
_____   *   _____

and

_____   *   _____

4111 „Customers"   =   **4427** „VAT collected"   (VAT amount in minus)
_____   *   _____

5. CONCLUSIONS

Therefore, each of the above-listed commercial discount has a particular accounting treatment. Of these, derivatives even the trade discounts implications on the financial position of the entities from Romania (the influence accounts 609 and 709, but not only).

We consider that the above are highlighted accounting treatment for commercial discounts received from suppliers, for commercial discounts granted to customers and their implications.

REFERENCES:

[1] Ecobici N., Bușan G. – „The impact of the accounting treatment on trade received discounts related to business", Proceedings of the Finance and Accounting Symposium, VI Edition „Accounting and taxation impact on the business environment in the context of sustainable development", 2017, Târgu Jiu

[2] Răpcencu C, Stanciu L - „Practical guide to new accounting rules from January 1st, 2015", S&R Accounting Leader, Bucharest, 2015

[3] OMFP no. 1802/2014 from 29.12.2014 for approving the Accounting regulations on the annual individual and consolidated financial statements, consolidated version of 12.10.2015 (revoked OMFP no. 3055/2009) (with OMFP no. 4160/2015 amending and supplementing certain accounting regulations, published in Official Gazette of 21.01.2016)

[4]   IAS   10   -   Events   After   the   Reporting   Period, *www.iasplus.com/en/standards/ias/ias10*

WAGE - THE PRICE OF LABOUR

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Abstract
Even if the message is glacial and arid figures by its relevance accounting information has become "sine_qua_von_ul" modern management.

The salary would highlight as "monetary expression of the value of labor", "price of the work force," "labor pay". Simply wage is defined as "payment, usually in cash, an activity made", "labor price", "work pay".

The fact is that wages in contemporary conditions, is for all countries, the most important came from society. He accounting for about 80% of national income of developed countries. In this situation it is natural that salary to sit out both theoreticians and practitioners, to stand out, we can say that the vast majority of the population of a country. Of course, the problems that arise in connection with it are in particular those relating to his level, as forms of pay (payroll) practiced in a branch or another, in one enterprise or another.

Keywords: price, wage, labor

Classification JEL: A1, A10, A30

1. INTRODUCTION

Wage not there at all times, although the labor factor ever participated in the production process. In fact, it is unimaginable production process in general economic activity without the presence of labor. Then it appears clear that salary, regarded as income persons participating through their own production process is ocategorie economic, which appeared under certain conditions socio-economic, with the emergence in society of people without the conditions necessary for the organization and conduct production, in addition to their work force, which, for them, appear as the only means of existence

So with time the labor has played a leading role in the functioning of an economy. From a business perspective, this represents a cost (labor costs) which includes not only salaries and wages paid to employees, but also non-wage costs, especially social security contributions payable by the employer. Thus, it is a determining factor for the competitiveness of enterprises, although, in turn, is influenced by the cost of capital (eginterest on loans and dividends on equity) and non-price elements such as tariff such as innovation and the brand/products positioning on the market

2. WAGES AND LABOR COST IN ROMANIA

As far as employees are concerned, the compensation received for their work, more commonly called wages or earnings, generally represents their main source of income and therefore has a major impact on their ability to spend or save. Whereas gross wages/earnings include the social contributions payable by the employee, net earnings are calculated after deduction of these contributions and any amounts which are due to government, such as income taxes. As the amount of taxes generally depends on the situation of the household in terms of income and composition, net earnings are calculated for several typical household situations.

So in figure below summarizes the relationship between net wage income, wage income / gross wage and labor cost
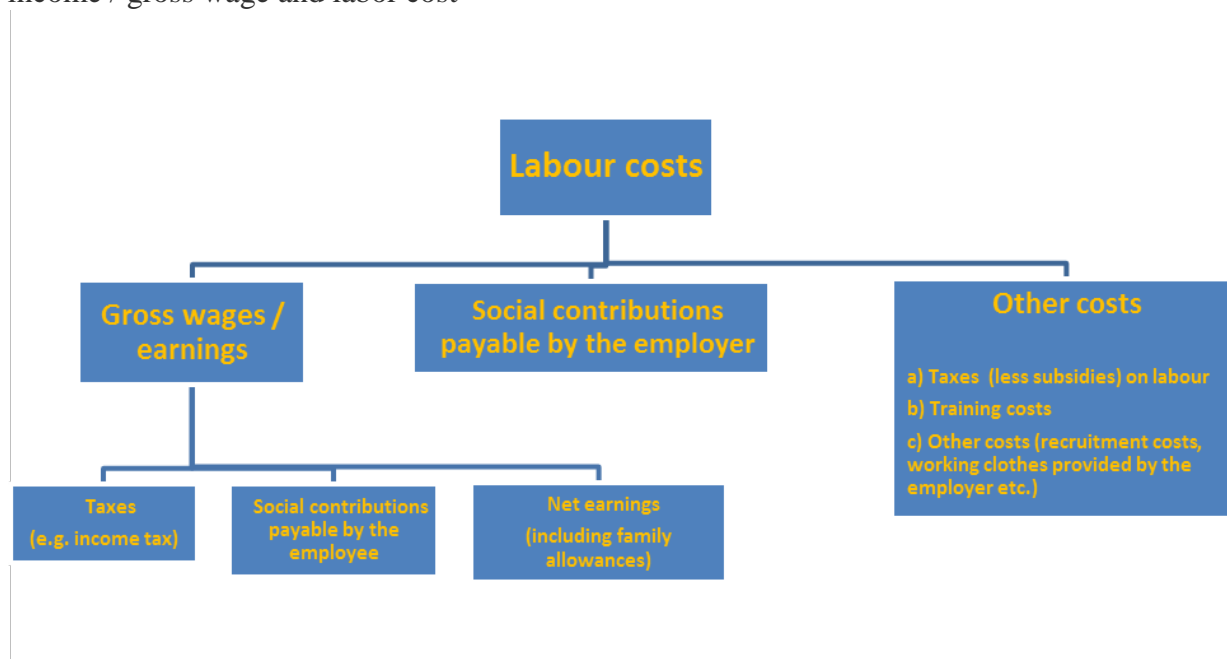
Figure 1. Components of labor cost
Source: http://ec.europa.eu/eurostat/statistics

So pay "is   only a   way   to pay, not only absolute but relative recent economic history, which was generalized than once modern capitalist organization and employers ..."

Generally the labor cost or price consists of costs related to salaries, plus non-wage costs such as employer's social contributions. Percentage of non-wage costs for the whole economy was 24.0% in the EU-28, while the euro area, it was raised to 26.0%.Also, the percentage of non-wage costs varied considerably from one Member State to another. The highest   rates of non-wage   costs for   the   whole   economy were   registeredin France (33.2%), Sweden (32.1%), Italy (27.9%), Belgium,   Lithuania (both 27.8%)   and Czech   Republic (27.1%).   The   lowest   levels of non-wage   costs for   the   overall economy recorded in Malta (6.6%),   Luxembourg (13.5%),   Ireland (13.7%), Denmark(13.9) and Croatia (14 , 9%).

In terms of population growth and tariffs for services, gross national minimum rates of pay rose steadily in relation to inflation and in recent years reached the level of theannual salary to establish, at the beginning of the year. [5.]

Thus the gross national minimum wage increased since February 2017 with 200 lei, from 1250-1450 lei. Automatic increase means additional expenses for employers who will pay higher net remuneration of employees, and more money for taxes and compulsory contributions related to wages. From the perspective of the employee paid the minimum wage, it should know that will receive this month in hand 1.065 lei to 140 lei in addition to how he received last month, for example.

Even though minimum wage increased from January 1, 2017 were Romania with Bulgaria lowest minimum wages in the EU, and 235 euro or 275 euro per month

Minimum wage levels 2015 to 2017

Country	Rate	Currency	Level of the statutory minimum wage			Increase 2016-2017
			2015	2016	2017	
Bulgaria	Monthly rate	BGN	380	420	460	9.52%
Croatia	Monthly rate	HRK	3029.55	3120	3276	5.00%
Czech Republic	Monthly rate	CZK	9200	9900	11000	11.11%
Estonia	Monthly rate	EUR	390	430	470	9.30%
France	Monthly rate	EUR	1457.52	1466.65	1480	0.91%
Germany	Hourly rate	EUR		8.5	8.84	4%
Hungary	Monthly rate	HUF	105000	111000	127500	14.86%
Ireland	Hourly rate	EUR	8.65	9.15	9.25	1.09%
Latvia	Monthly rate	EUR	360	370	380	2.70%
Lithuania	Monthly rate	EUR	325	350	380	8.57%
Luxembourg	Monthly rate	EUR		1922.96	1998.59	3.93%
Malta	Weekly rate	EUR	166.26	168.01	169.76	1.04%
The Netherlands	Monthly rate	EUR	1507.8	1524.6	1551.6	1.77%
Poland	Monthly rate	PLN	1750	1850	2000	8.11%
Portugal	Monthly rate	EUR	505	530	557	5.09%
Romania	Monthly rate	RON	1050	1250	1450	16.00%
Slovakia	Monthly rate	EUR	380	405	435	7.41%
Slovenia	Monthly rate	EUR	790.73	790.73	804.96	1.80%
Spain	Monthly rate	EUR	648.6	655.2	707.6	8.00%
UK	Hourly rate	GBP	6.7	7.2	7.5	4.17%

Figure 2. Minimum wage lavels of cantry in 2015-2017
Source: http://www.capital.ro

Although wage increases were well felt in recent years in pockets Romans, we still managed to gain a good position in the European Union.

Wages increased, but not enough to bring us closer to living satisfaction from West.

3. CONCLUSIONS

By correcting the amount of gross salary in the country not only in relation to the increase in prices and tariffs, but according to the economic growth, ensure a fair reflection of this growth in income for all categories of employees. Consequently, the background current growth dynamics upside is fully justified to ensure increase in real incomes and visible progress in achieving poverty alleviation.

At the microeconomic level, of each agent is necessary wage to boost productivity, acting both as a means of adjusting the partition ininteriorul firm profit between employees and employer, thereby fulfilling its concomitentsi role of macroeconomic stabilization, at maintaining suitable inflation unemployment sirespectiv.

REFERENCES

[1.] Creţoiu Gh., Cornescu V., Bucur I. (2011), *Economie,* Bucureşti: Editura CH. Beck;

[2.] Gheorghe Oprescu – Microeconomie, 2005

[3.] Sebastian Văduva, Ciprian Benea, Igor Prisac, Adrian Cioară, Daniel Neagoie, Ionuț Boghean – Economie Globala, 2016

[4.] Theoretical and Applied Economics (Economie Teoretică și Aplicată) nr. 4 - 2016

[5.] Revista Tribuna Economica nr 1, 2, 3/2016

***http://www.codulmuncii.ro Codul muncii

***http://ec.europa.eu/eurostat/statistics

***http://www.insse.ro/cms/ - Institutul National de Statistica

***www.mmuncii.ro - Ministerul Muncii, Familiei şi Protecţiei Sociale

*** www.ec.europa.eu/eurostat

*** http://www.capital.ro

RISK MANAGEMENT OF FRAUD IN THE INSURANCE

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Abstract

Fraud has always generated and generates significant risk across all financial sectors. Insurance costs are incurred both insurers and of insured persons. Losses from fraudulent activities affecting the profits of insurers and may have negative impact on their financial soundness. To compensate for these losses, insurers are forced to increase insurance premiums, which involve increased spending for sure. Also, fraud can lead to diminished confidence in the company and shareholders and clients can affect the reputation of a single insurer or all insurance markets and broadly can even affect macroeconomic stability.

Keywords: risk, fraud, management, insurance

Classification JEL:

1. INTRODUCTION

As discussed in the Explanatory Dictionary of the Romanian Language, fraud is defined as cheating, dishonest act committed by someone, usually to achieve a material profit from the rights of others. Amount stolen through deception or fraud, theft of material goods to make a profit, damages another.

The three main categories in which it is classified fraud are:

➢ fraudulent reporting;
➢ misappropriation of assets;
➢ corruption.

The statements fraud fraudulent schemes are usually performed by people in senior management and are producing the biggest losses for the affected organization.

The assets misappropriation schemes type are usually made of employees and in turn can be classified into subcategories. They have the highest frequency of occurrence and that produces the lowest losses since frauds tend to be significant and very difficult to observe individual internal auditors or external ones during audits.

2. INSURANCE FRAUD

Build great financial scandals and hence the global economic crisis, is largely fraudulent schemes proportions. By using "creative accounting", fraud and error, famous companies have managed to distort reality performance and their market position, misleading users' perception. In a world of risk, the investor must obtain reliable information before and employ capital in a company, be it successful. Major financial scandals of recent years have focused public interest in better regulation / deregulation in finance and accounting, with particular regard to corporate fraud. Managers should realize that the risk of fraud is a major problem that can not be solved by any "quick fixes". [7]

Although not as sophisticated as in the West, the phenomenon of insurance fraud in Romania is about the same level as a percentage and is growing out.

The desire to profit from others, some clients of insurance companies are tempted:

✓ to improvise cases provided. Examples are staged theft (concealing or selling the object and declare it stolen), the deliberate destruction of the insured object (there were cases when the person has hit car with a hammer to mimic hail but was clue in that it applied blows inside ...);

✓ to exaggerate claims by making false statements on losses. Most often people claim that some objects were at the damage, when in reality they did not exist or were otherwise intact;

✓ to sign insurance contracts immediately after or until the occurrence of the insured event. Most commonly this occurs in motor liability insurance, but felt in insurance of persons and property. In this case, the role of the corruption among police, fire or medical personnel is hard to neglect and resumes, usually: records and forged certificates;

✓ to abusing multiple insurance by filing multiple claims for the same damage to several insurance companies;

✓ to falsify or counterfeit insurance certificates.

"Insurance fraud in are estimated at about 10% of the gross receipts, and only 2% - 3% is present. The phenomenon is not declining, unfortunately. Those who specialize in fraud becoming more a speed higher than specialize in insurance fraud. Although outside the police more involved in detecting fraud in insurance and greatly appeal to specialized companies, the percentage of fraud is lower than ours, and that's because apart are more sophisticated".

A big problem is that the extent of fraud is almost taboo subject for insurers and detected cases are not made public.

The European statistics show that 14% of registered damage can be classified as fraud and that 35% of those who own an auto insurance policy is trying to cheat insurance companies. Romania enters the European average, CSA representatives stating that auto insurance fraud reached 15% of all cases.

Although it is a very serious crime are very few examples of eradicating fraud. They are not publicized frauds discovered. When they discover insurers enjoy the one who tried to defraud withdraws request.

The insurance companies there are several approaches on the issue of fraud and attempted fraud. Some companies have specialized departments that are investigating suspected cases, while others rely on a relationship emphasized collaboration between

inspectors damages and legal advisors. Probably to make investments in various systems whose role is to detect attempted fraud, noting that these cases [5].

Decreased revenues, rising unemployment and, thereby shrinking living standards and worsening with the onset of the financial crisis, have created conditions that led to increasing levels of fraud in insurance activities, especially in the area of motor insurance. Although in general, although the low number of cases approved for damages, the number of fraud attempts increased by 10% compared to previous years.

The challenges faced by organizations today are to "build" on the foundation already established and ensure that the organization's plan to respond to the risk of fraud is robust and scalable to manage future growth. Current shortage of resource and budget constraints have reduced the effectiveness of the management of several risks of fraud, which must be remedied as quickly as possible. A new period of economic growth will "bring" many challenges for organizations increase the risk of fraud, potential occurrence of new cases of fraud and the need for more interest from regulators. Companies need to develop effective anti-fraud programs by using robust procedures applicable to fraud risk assessment and response to new challenges in the national and international economic environment and to achieve sustainable growth of the company.

3. CONCLUSIONS

Whether it's fraud light / opportunity or serious fraud, such as simulated accidents, we must admit that we are dealing with a phenomenon that has grown in our country that still is not punished as they should. The most effective way of tackling this problem would be closer collaboration between insurance companies.

Companies must instill a corporate culture of risk management in particular with regard to fraud. More than three quarters of board members are concerned about personal liability, but this does not seem to have resulted in effective strategies for risk management organization. Representations, much publicized codes of ethics, continuing vocational training are means educating employees, third parties, such atmospheres still everyone has a role to play in the Anti-Fraud.

Although insurers are trying to put in place to fight against fraud, are overwhelmed by the ingenuity of "professionals", the biggest scams being made by people inside.

REFERENCES

[1] Horomnea, E. (2012). Audit financiar, concepte, standarde, norme. Ed. TipoMoldova, Iaşi; [2] Jingă, C. G. (2009). Audit financiar. Editura ASE, Bucureşti;

[3] ***Deterring and Detecting Financial Reporting Fraud - A Platform for Action, Center of Audit Quality, www.TheCAQ.org;

[4] ***Driving Ethical Growth – new markets, new challenges, 12th Global Fraud Survey, Ernst&Young, 2012

[5] ***12th Global Fraud Survey, The Results for Romania, Ernst&Young, 2015

[6] ***[http://www.mi.bxb.ro/Articol/mi_28_12.pdf

[7] ***http://www.constatulamiabil.ro/237_daca-e-criza--e-frauda-in-asigurari.html

THE ANALYSIS OF THE COSTS AND THE CORRELATION BETWEEN TARIFF AND COST IN THE SECTOR OF CLEAN WATER AND SEWERAGE IN ROMANIA

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Abstract
The analysis of the costs and of the structure of tariffs for operators in the sector of water and sewage system in Romania are a real challenge. Through this analysis we can form an overview of the costs which may involve in the service of providing clean water and the sewage and wastewater treatment. The costs is analysed both in the cost structure at the enterprise level and in comparison with the income made from the activity (supply of drinking water or treatment of wastewater). In the article we study the cost structure at the level of sector of activity and the correlation between the tariff applied to water and sewer services and size of enterprise, number of employees, wage costs, maintenance and repair costs, energy cost and other variables. The correlations results helps us to make the first steps for the realization of an equation of the cost at the level of the sector of water and sewage system. Another correlation study will be between the applied tariff and the size of the investments made with european co-financing in the framework of the SOP Environment. Through this correlation we determine if the size of the tariffs applied in this sector correlate to the size of the investments made in the SOP Environment.

Keywords: water policy, water cost, water tariff

Classification JEL: L95, Q25, M19

1. INTRODUCTION

It is very important that the efficiency costs generated by public service utilities, as is the service of water and sewer to be permanently measured and monitored. It is important to monitor and control, because most of the operators of water and sewerage are with public capital, so indirectly using public money and operates on an infrastructure in the majority public. Public control can be achieved using performance indicators that are monitored these public enterprises. In the set of performance indicators usually are included: indicators in the technical field, quality of services, and some financial indicators

such as profit, rate of profitability, etc. Apart from the above mentioned indicators is important the analysis of costs and cost structure in order to know better the work of the operators of water and sewage. Studying at the national tariff structure in general, we can figure out if there are significant deviations from the average on the country and if the fare increase is due to rising energy costs, the raw water, the staff, the services provided by third parties, depreciation, license royalty's or profit increase expected by owners. In other news it is as important as tariffs to cover costs of this activity (Hoque and Wichelns, 2013; Massarutto, 2007). The cost structure is specific in this field of industry and their analysis makes us possible to forecast in terms of their evolution in the future.

2. PAPER BODY

The method of research used

Our research is based on the analysis of the specialized literature and the case study. In the research we based on the literature review and as a method of research we used comparative analysis. We compared the Roumanian approaches with the international approaches and through a critical and interpretative analysis we have formulated the conclusions of this research. To emphasize those set out in the conclusions we have realized a case study.

Literature review

As the first step of the literature review, we need to address how to control tariffs in this area. The level of cost accepted and the level of estimated profit depends on the mode of regulation of tariffs. Theoretically there are two possibilities of the regulatory (control) of the tariff (Arnaud and Alban, 2012). Potential problems generated by the two methods are multiple and complex, each having both advantages and disadvantages. A very good summary of these problems has been made by Newbery (1997). Control can be achieved by regulating the tariff (price), or by regulating the rate of return allowed in the price formation.

By regulation based on cost or on the rate of return is paid to the capital invested by the company. If there is a change in the level of costs, rates are adjusted by the operators of water and sanitation with the supervision of the regulatory authority. This adjustment is done with the aim of ensuring the profitability projected by the company.

As an alternative to cost-based regulation may occur through tariff regulation. By applying this method, the regulatory authority imposes a price which can be adjusted in the conditions set in advance, such as the change of the general price index but also in function of other possible factors (Alexander and Irwin, 1996).

The alternative tariff governed, would lead to a more efficient firms, but at the same time to minimize investments in the field.

It is interesting that today in Romania applies both approaches. Usually in the methodology of establishment, adjustment or change of prices/tariffs for public services of water and sewer (A.N.R.S.C order no.65 / 2007) shall apply to the cost method. The operating costs that justify the operator adds the profit margin "reasonable", thus obtaining the final price.

In the case in which the operator of the regional access european funds for investment (from the axis of the SOP – Environment) the annual rate established by a tariff

plan (pricing policy), which is the result of the calculations made in the Cost-Benefit Analysis. So in this case it is regulated tariff. Subtracting from the regulated tariff cost and profit get the Fund for maintenance, replacement and development (IID), which is used for the repayment rates on loans contracted in order to ensure own contributions to the Contracts with European co-financing.

Case study

To the achievement of the case study we used a database with data of the 43 regional operators over the period 2012-2015, the only operator that is missing from the study is the operator of the Bucharest which is a private operator and has not provided data.

We conducted an analysis of the cost structure, because they are the elements that underlie the tariff. Theoretically we can say that we have achieved a national structure of the tariff of drinking water supplied by systems of public utilities. After the first run of the data for the year 2012 in SPSS were detected outliers. The costs of staff and electricity data have a normal. For other expenses occurred these outliers. The expenses provided by third-party SPSS has detected 2 outliers, which were corrected in order not to distort the statistics (the correction was done to the highest value plus a unit, i.e. from 24,65% was corrected to 12,96%).

The structure of expensis to the operators of water and sanitation during the period 2012-2013

Nr. Crt.	Nature of expensis	2012			2013		
		Average (%)	Minimum (%)	Maximum (%)	Average (%)	Minimum (%)	Maximum (%)
1	Staff expensis	48,61	32,93	63,37	48,25	29,81	65,61
2	Energy expensis	12,51	2,00	23,47	13,36	2,56	26,79
3	Expenses with raw materials and materials	8,34	1,54	17,72	8,08	2,05	19,67
4	Other operating expenses	7,04	0,00	35,50	6,14	0,00	19,37
5	Expenses with third party services	5,82	1,72	12,96	5,72	0,00	22,06
6	Expenses with the raw water and treated bought	5,65	0,26	25,46	5,78	1,83	33,76
7	Expenses with royalty	5,00	0,00	15,94	4,94	0,00	16,31
8	Expenses with amortization	3,27	0,51	8,10	3,35	0,39	9,67

Table no.1.1 The structure of expenses to the operators of water and sewage, the supply of drinking water, the period 2012-2013 (Source: own elaboration)

The structure of expensis to the operators of water and sanitation during the period 2014-2015

Nr. Crt.	Nature of expensis	2014			2015			Total avarage (%)
		Average (%)	Minimum (%)	Maximum (%)	Average (%)	Minimum (%)	Maximum (%)	
1	Staff expensis	48,84	14,58	66,44	48,32	25,24	67,05	48,50
2	Energy expensis	10,56	1,06	21,80	9,90	1,71	20,85	11,58
3	Expenses with raw materials and materials	7,99	0,00	24,15	8,07	0,00	24,12	8,12
4	Other operating expenses	6,88	0,00	60,13	6,17	0,00	32,14	6,56
5	Expenses with third party services	6,36	1,16	21,83	6,79	0,39	23,27	6,29
6	Expenses with the raw water and treated bought	5,81	1,82	33,85	5,56	1,77	29,08	5,70
7	Expenses with royalty	4,92	0,00	15,81	5,15	0,00	17,75	5,00
8	Expenses with amortization	3,55	0,32	8,93	3,79	0,34	9,56	3,49

Table no.1.2 The structure of expenses to the operators of water and sewage, the supply of drinking water, the period 2014-2015 (Source: own elaboration)

In table 1.1 and 1.2 we present the structure of the expenditures for the 43 regional operators included in the study during the period 2012-2015. We can say that in this sector, the activity of water, in the average of the operating expenses staff costs represent 48,50%. As and size these are followed by electricity costs, which on average is 11.58 percent with a downward trend. Studying the lows and highs of the sector we can realize that there are considerable differences from one operator to the other.

The first correlation that we have studied refers to the relation between firm size and the rate applied, we have assumed that small enterprises have a higher rate, because it does not apply to the advantage of the industry to scale. Regional operators are in charge of the work of sewerage and wastewater treatment. The share of the two activities is presented in the following way: 60% of the activity is the provision of water and 40% activity of sewage and wastewater treatment. The classification of enterprises into small, medium and large, we took into account the number of employees according to the norms and these weights. We considered that it is medium-sized enterprise who has on this activity less than 150 employees (250 employees - the criterion of standard size x 60%) and large enterprise who has over 150 employees (there were no cases of small enterprise). We validated the data and were considered valid, all the 43 positions by SPSS.

Table of statistical analysis of the correlation between the water tariff and the size of the enterprise

		The average water tariff	The size of the enterprise
The average water tariff	Pearson Correlation	1	-,115
	Sig. (2-tailed)		,464
	N	43	43
The size of the enterprise	Pearson Correlation	-,115	1
	Sig. (2-tailed)	,464	
	N	43	43

Table no.2 Table of statistical analysis of the correlation between the water tariff and the size of the enterprise (Source: own elaboration)

From the analysis of the correlation between company size and the average tariff, it follows that there is a significant correlation between the two.

Another correlation we studied refers to the possible connection in the size of the average tariff applied and staff expensis, staff expensis expressed as percentage in the total expensis and staff expensis per a cubic meter of sold water. We assumed that it would exist correlation between the last two variables used and the size of the gross average tariff.

In Table no. 3 we can see descriptive statistics for 2012 for these variables.

Descriptive statistics - water tariff, staff expensis

	Mean	Std. Deviation	N
The average water tariff	2,7760	,45415	43
Staff expenses	13726139,44	8620407,139	43
Staff expenses in total operating activity expenses %	48,6057%	8,02310%	43
Staff expenses per unit	1,4991	,61847	43

Table no.3 Descriptive statistics for the variables water tariff, staff expensis, staff expensis in total operating expenses and staff expensis per unit of product (Source: own elaboration)

From the analysis of the correlation, as can be seen in table no.4, it follows that there is not a real correlation (significant) between the size of the tariff applied and staff expenses in the total amount.

Table of statistical analysis of the correlation between the water tariff and staff expenses, staff expensis in the total operating activity expensis, the staff expensis per unit of product

		The average water tariff	Staff expenses	Staff expenses in total operating activity expenses %	Staff expenses per unit
The average water tariff	Pearson Correlation	1	-,056	-,194	,741[**]
	Sig. (2-tailed)		,723	,214	,000
	N	43	43	43	43
Staff expenses	Pearson Correlation	-,056	1	-,150	-,342[*]
	Sig. (2-tailed)	,723		,336	,025

		The average water tariff	Staff expenses	Staff expenses in total operating activity expenses %	Staff expenses per unit
	N	43	43	43	43
Staff expenses in total operating activity expenses %	Pearson Correlation	-,194	-,150	1	,231
	Sig. (2-tailed)	,214	,336		,136
	N	43	43	43	43
Staff expenses per unit	Pearson Correlation	,741[**]	-,342[*]	,231	1
	Sig. (2-tailed)	,000	,025	,136	
	N	43	43	43	43

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table no.4 Table of statistical analysis of the correlation between the water tariff and staff expenses, staff expensis in the total operating activity expensis, the staff expensis per unit of product

From the analysis it follows that there is a correlation enough strong and significant between wage costs per unit of product and the tariff applied to r = 0,741 and p<0.01. The variation in these conditions of the tariff is due to wage costs per unit of product in a measure of 54,90%.

We assumed that there might be a correlation between the size of the tariff applied and the number of general administrative staff.

Table of statistical analysis of the correlation between the water tariff and the number of administrative staff

		The average water tariff	General and administrative staff number per unit
The average water tariff	Pearson Correlation	1	,674[**]
	Sig. (2-tailed)		,000
	N	43	43
General and administrative staff number per unit	Pearson Correlation	,674[**]	1
	Sig. (2-tailed)	,000	
	N	43	43

**. Correlation is significant at the 0.01 level (2-tailed).

Table no.5 Table of statistical analysis of the correlation between the water tariff and the number of general administrative staff

The results of the analysis confirms this correlation significant between the size of the tariff and the number of employees with general-purpose administrative. r=0,674, p<0,01. The variation of the tariff, which can be attributed to this correlation is the r2, I mean 45,42%.

As a last hypothesis we formulated that the costs per unit of product correlates with the size of the tariff. The result of the analysis is an interesting one, as can be seen in the table no.5.

Table of statistical analysis of the correlation between the water tariff and the various variables per unit of product

		The average water tariff	Staff expenses per unit	Services rendered by third parties expenses per unit	Purchased raw water expenses per unit	Electricity expenses per unit	Materials expenses per unit	Depreciation and amortization expenses per unit	Royalty expenses per unit
The average water tariff	Pearson Correlation	1	,741[**]	,381[*]	-,041	,125	,244	,237	,001
	Sig. (2-tailed)		,000	,012	,795	,423	,114	,127	,994
	N	43	43	43	43	43	43	43	43

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table no.6 Table of statistical analysis of the correlation between the water tariff and the various variables per unit of product

The only one that correlated in a significant with the size of the tariff (except the expense of staff per unit of product, previously analyzed) is the expense with the services carried out by third parties, and surprisingly with the rest of the elements there is no correlation significant.

CONCLUSIONS

Analyzing the literature we can conclude that today every country has occurred or is occurring a regulatory mode of formation of the tariff for water and sewage and in this way the efficiency of these activities. This regulator may be one based on cost, respectively on the tariff. In our country applies in some way both in mixed mode. The formation of normal tariff (without investment from european funds) is used based on cost, and within the framework of tariff policies based on the CBA-sites made for the investment of european funds, the approach on the basis of tariff.

In the case study we present a small niche in the statistical analysis of data 43 of operators of water and sewage, which cover the entire territory of the country missing only the operator of the Aqua Nova in Bucharest.

As a first step we analyzed the cost structure of the 2012-2015 period and we conclude that the greatest expense is staff expense, which is almost 50% of spending, followed by about 12% of energy costs.

In further research we have formulated a few hypotheses that we tested analyzing the existing correlations between different variables by the Pearson method with the help of the working tool SPSS. We concluded that the size of the tariff applied by the various operators of water and sanitation correlates with staff costs per unit of product and with the number of employees with general administrative purposes. To our surprise does not correlate in a significant expenditure with raw water, energy, materials, depreciation and royalty.

BIBLIOGRAPHY

Alexander, I., Irwin, T., 1996. Price Caps, Rate-of-return Regulation, and the Cost of Capital. The World Bank Group, Note No 87.

Antonio Massarutto, Paolo Ermano - Drowned in an inch of water. How poor regulation has weakened the Italian water reform, Utilities Policy, 2012

Arnaud Reynaud, Alban Thomas - Firm's profitability and regulation in water and network industries: An empirical analysis, Utilities Policy, 2012

Bhattacharyya, A., Harris, T.R., Narayanan, R., Raffiee, K., - Specification and estimation of the effect of ownership on the economic efficiency of the water utilities. Regional Science and Urban Economics 25 (6), 759–784, 1995

Coelli, T., Walding, S., - Performance measurement in the Australian water supply industry. In: Coelli, T., Lawrence, D. (Eds.), Performance Measurement and Regulation of Network Utilities. Edward Elgar Publishing, Cheltenham, 2006

Dale Whittington, Celine Nauges, David Fuente, XunWu - A diagnostic tool for estimating the incidence of subsidies delivered by water utilities in low- and medium-income countries, with illustrative simulations, Utilities Policy, 2015

David M Newbery - Rate-of-return regulation versus price regulation for public utilities, The New Palgrave Dictionary of Economics and the Law. MacMillan, London, 1997

Estache, A., Kouassi, E. - Sector organization, governance and the inefficiency of African water utilities. In: World Bank Policy Research Working Paper, No. 3374, 2002

Garcia, S., Thomas, A. - The structure of municipal water supply costs: application to a panel of French local communities. Journal of Productivity Analysis 16, 2001

Peeter Peda, Giuseppe Grossi, Margo Liik - Do ownership and size affect the performance of water utilities? Evidence from Estonian municipalities, J. Manag. Gov., 2013

Saal, D.S., Parker, D. - Productivity and price performance in the privatized water and sewerage companies of England and Wales. Journal of Regulatory Economics 20, 2001

Steven Renzetti, Diane P. Dupont, Tina Chitsinde - An empirical examination of the distributional impacts of water pricing reforms, Utilities Policy, 2014

Torres, M., Morrison Paul, C.J., 2006. Driving forces for consolidation or fragmentation of the US water utility industry: a cost function approach with endogenous output. Journal of Urban Economics 59, 2006

MONETARY POLICY INTEREST RATE AT THE CONFLUENCE OF MACROECONOMIC INDICATORS

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Abstract
The interest rate monetary policy is an obvious tool for monetary policy strategy the central bank sets a certain monetary stability. At the same time communication system between monetary policy decisions and price stability ba-handling zează official interest rates on monetary policy. The confluence of macroeconomic indicators and monetary policy interest rate is the place indicating the economic situation seen in the light of these indicators. In this study which will present the macroeconomic situation, the GDP, inflation and unemployment in the interest rate of monetary policy imposed by central banks in various states. As a research method we used analysis of transmission mechanism of monetary policy decisions to the confluence with the main macroeconomic indicators.

Keywords: monetary policy rate, GDP, inflation, unemployment

Classification JEL: E42, E50, F30

1. INTRODUCTION

The analysis presented statements on EU development shows that monetary policy measures submitted by central banks now more than ever a direct impact on national economies and hence the trajectory of the European economy, but also an indirect impact on performance and architecture of financial institutions.

Fundamental objective of most central banks is to maintain price stability. Central banks generally have other functions such as maintaining monetary stability and macroeconomic surveillance. Among the special activities attributable to the central bank, in addition to the traditional function characteristic of achieving monetary issues are those of ensuring the smooth operation of payment systems, management of foreign exchange reserves or that the lender of last resort for credit institutions . If we look at people as consumers of banking products and services offered by credit institutions, some central bank fulfill sometimes a social function of consumer protection. But of all the functions of a central bank that is at the confluence of macroeconomic indicators, it can be said that the most important is related to the "injection period" of money in the economy and their removal when "mass cash" not matches in the economy. However, by the specific instruments of monetary policy, especially by encouraging lending, central banks can contribute to sustainable development and sustainable economy.

Innovation of new banking products and especially its role in a sustainable economic credit granted by credit institutions is encouraged through monetary measures taken by central banks. In this usage policy rate to guide the establishment of interbank

deposits interest or to encourage lending can be reflected in macroeconomic indicators. But to the extent that money supply resulting from lending activities (through monetary creation) finds no counterpart in GDP growth then comes central bank that ultimately limiting credit extension by the price of money, namely through rate monetary policy.

2. PAPER BODY

Increases economic analysts looking for clues that show us what happens to the US economy, EU or other strategic area of the world where central banks monetary policy interest rate changes. One thing can be considered as meaning that monetary policy measures demand for money that is directly related to the transactions in the economy is reflected in nominal GDP. Money demand is influenced by interest rate, considered as the opportunity cost of holding money and monetary assets. Both surplus and deficit currencies have a major effect on the price level and other macroeconomic variables with immediate impact on the living standards of the population and level of economic activity of businesses.

The link between monetary policy and macroeconomic indicators strategy is determined by reducing or increasing the policy rate. Ensemble transmission of monetary policy decisions is conducted at least two channels: channel savings and channel deposits, loans and financial market prices, both of which are influenced by monetary policy interest rate movements.

The analysis carried out in the past three years the interest rate change monetary policy in Romania can always find that it decreased and is now 1.75%. This shows that the central bank has given a signal to increase investment while increasing global demand. In this respect all basic components of aggregate demand: the demand for personal consumption, government procurement, investment demand and external demand consists of net exports contributing significantly to GDP growth.

Interaction interest rate change monetary policy of our country with inflation and "output gap" in the transmission mechanism of decision is influenced by a number of exogenous financial markets such as fiscal policy, external demand and international price of oil.

Since central banks empirically analyze economic facts and ho crawl consequently what measures should be applied for valuing stability and financial balance issues that can facilitate increasing economic performance. Monetary policy measures set by central banks are seen in the changing macroeconomic indicators. But the confluence of all the consequences arising from the decision to change the interest rate monetary policy is reflected in the financial market where money is exchanged for holdings of real assets that can positively influence the standard of living.

In the analysis of international economic transactions, according to the GDP of the first countries in the world, the US continues to harmonize its policy rate to inflation and unemployment. Romania with a GDP of only 178 billion dollars at the rate of 1.75% monetary policy continues to keep inflation under control with unemployment of 5.5%, below the EU average of 9.60%. Romania is part of the emerging economies in financial markets call less developed and has undergone large-scale macro-economic adjustments in recent years. Usually these countries and total debt (public and private) as a percentage of GDP, about half of those recorded in developed EU countries. Apart from Japan, there are

countries such as Switzerland (75%), Sweden (0.50%) and Denmark (-0.65%) experiencing negative interest. It is becoming increasingly clear that negative interest rates erode bank profits, which is not desirable in the present circumstances when credit institutions seek to build capital reserves as a result of recommendations of "Basel III". There are many factors that influence the size of GDP and so the indicator is losing ground when analyzing for example, the living standards of people.

3. CONCLUSIONS

Analyzing theoretical and empirical confluence of macroeconomic indicators of monetary policy decisions through the eyes of the interest rate change is found to stimulate supply or demand for money has an important influence in the economy. If the central bank can control money supply, the state has an effective tool that can speed up or slow down economic activity contributing to price stability.

All the economic and monetary changes in recent years in the EU indicate the need for more active actions from central banks. Central authorities should use an increasingly generous monetary policy tools for assigning and maintaining the economy on an upward trend leading to higher living standards.

If monetary policy transmission mechanism incorporates money demand equation that reflects the quantity theory of money, when the money supply is not directly controlled by the central bank, money depending on the interest rate, national income and price levels. Long-term relationship between money and prices - empirically proven - is widely accepted by central banks and according to recent opinion of some scholars, this correlation but not necessarily imply a causal theory.

REFERENCES

1.   Josep E. Stigliz, Mecanismele globalizării, Ed. Polirom, București, 2008;
2.   Silviu Cerna, Politica monetară, pag. 173, Editura Academiei Române, București, 2014;
3.   Silviu Cerna, Economia monetară, pag. 297, Editura Universității de Vest, Timișoara 2009;
4.   Silviu Cernea- Politica monetară, Editura Academia Română, 2015;
5.   http://www.tradingeconomics.com/
6.   http://www.capital.ro/nivelul-de-trai-un-indicator-mai-bun-decat-pib-ul.html
7.   http://www.gandul.info/international/cele-cinci-scenarii-pentru-reforma-ue-planul-istoric-anuntat-la-bruxelles-

PROFIT AND LOSS ACCOUNT – SYNTHETIC EXPRESSION OF ABSOLUTE RETURN

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Abstract
This study has as main objective the presentation of the current state of knowledge regarding the profit and loss account as part of the financial statements which express in absolute value the profitability of companies and the empirical analysis of these concepts based on the information submitted by OMV Petrom between 2011 and 2015.

Thus, in the first part we present several approaches from the specialized literature regarding the aspects mentioned above.

The second part follows a vertical and horizontal analysis of key indicators used for measuring the absolute return. For the horizontal analysis we pursued the evolution in time of the following indicators: Gross Margin, Earnings Before Interest and Taxes (EBIT), Financial Result, Gross and Net Result. The vertical analysis aimed to explain the formation of the Gross Result via EBIT (which was also analyzed through the Gross Margin and other specific elements) and of the Financial Result (which was also analyzed through the different types of financial income and expenses).

The results of the study revealed problems of profitability in the years 2014 and 2015 which, in our opinion, can be attributed to poor management of the commercial activity, exploration activity (research and development), distribution and financial activity.

Key words: *profitability, eficiency, structure, gross result.*

INTRODUCTION

The issue of profitability analysis divides theoriticians and practitioners from the field of economic and financial affairs into two sides: those who support the principles of the analysis based on indicators in absolute measure and those who rely mainly on indicators used for assessing profitability in relative measure (Mica, I.G., 2009). Even if the analysis based on the indicators for assessing profitability in relative measure have the indisputable advantage of allowing a much more easier benchmarking between entities that have common elements (comparisons in space), there are numerous studies that highlight the higher utility of the indicators in absolute measure, even in areas such as expressing the hidden volatility in the financial markets (Giles, D.E., 2007). Moreover, correlations between the volatility of the

financial markets and absolute return indicators are also highlighted by other authors (Franses, P. H., et. Al., 2002).

Research methodology

In terms of research methods, the theoretical part of the study was achieved through expressing the opinions from the specialized literature regarding the analysis of the profit and loss account as a tool of expression of absolute return of entities.

Regarding the empirical research, the analysis was based on the financial information recorded by OMV Petrom SA between 2011-2015. This analysis aimed at presenting the absolute numbers expressing the profitability of the company in the examined period of time starting from the gross result (as a key indicator of expressing absolute return) and moving vertically with the observation of the influence that each element has on the indicator from the top level of analysis.

Literature review

The profitability analysis is an area that is always of interest for theoreticians and practitioners in the financial-accounting business. As means to express performance (profitability), the main indicators are the ones found in the profit and loss account (absolute values), but, in our opinion, the capitalization of these figures is done through relative figures or by processing absolute values in order to obtain certain rates that characterize more eloquent the image on the profitability of a company. At the same time, correlating these indicators with other types of indicators, as well as observing how the latter may affect the profitability of the analyzed entities represents an aim itself of the profitability analysis (Burja, C., and Burja, V., 2014).

Summarizing the studied aspects, we admit that when analyzing a single entity (possibly when an analysis in dynamics/time is desired), we can content ourselves to an analysis based on absolute figures, but if we aim at pursuing comparisons in space, it is necessary to use indicators of assessing profitability (performance) in relative size. This approach is validated also by Camilleri, S. J. (2005).

The shortcomings of absolute measures when pursuing a comparison in space (between companies operating in the same geographical area) are highlighted also by Deaconu, S.C., (2012), who considers inadequate a ranking of companies based exclusively on turnover.

In the same manner is carried out the analysis performed by Droj, L., (2015) who uses only the relative size indicators for assessing performance (profitability) of entities, resorting to raw data from both the profit and loss account and the balance sheet.

The problem of using absolute or relative numbers in the analysis of return (performance) is definitely settled by Gibson, C., (2011), who states that absolute values do not have so much informational power as relative figures (rates) obtained by reporting to bases such as: assets used in production, invested capital, or sales.

Returning to the profit and loss account (often met as the „Statement of revenue and expenditure", especially in the optics of reporting according to IFRS), it includes the absolute values of profitability indicators expressed in general by income and expenditure or by

indicators obtained from making the difference between income and expenses, respectively result indicators (Burj, V., and Voiculescu, A., 2014).

Moreover, regarding the presentation of the profit and loss account, other opinions can be found: a research study (Rosemary, O., 2012) shows that both finance and accounting professionals, especially investors, would prefer a form of the profit and loss account in two columns.

The character of the profit and loss account as an instrument for measuring the absolute return is emphasized also in the study published by Monea, M., (2013), who conducts an analysis of the dynamics and structure of the elements contained by the profit and loss account.

Although there are specialized studies (Grigore, M., 2016) which suggest the idea that the financial audit of the annual financial statements aims to present an image of the general state of the entity, in our opinion this approach is incorrect, because the role of the audit is to present the measure in which the annual financial statements are drawn up or not in accordance with the applicable reporting.

However, profitability analysis based on the profit and loss account as a way to express the performance of economic entities represents only one of the first steps of the decisional process. An example of such a complex analysis is provided by Burja, C., (2011), which shows how the return (expressed in relative values this time) is influenced by various factors such as the rate of fixed assets, the degree of leverage, the financial lever, return on sales based on current assets, return on sales basedon equity, etc.

Obviously, our hypothesis (that the profit and loss account offers an image of the absolute profitability of the entity) does not exclude the possibility that, based on the indicators included in the profit and loss account, to make an analysis based on relative numbers. An example of this is provided by Căruntu, C., and Lapadus, M. L., (2012) who use the indicators from the profit and loss account to calculate a series of specific rates.

In order to observe the way in which the analysis of the indicators from the profit and loss account can be made, we realized an observation of OMV Petrom SA between 2011-2015

Results and discussions

The indicators from the profit and loss account of the analyzed company are presented in Table no. 1:

The indicators from the profit and loss account of OMV Petrom SA between 2011 and 2015

Table no. 1

Indicator	Financial exercise				
	2011	**2012**	**2013**	**2014**	**2015**
Sales revenue	16183,68	19122,51	18087,52	16537,18	13952,49
Direct costs of distribution	-13,28	-21,56	-37,81	-21,32	-11,96
Cost of sales	-10012,6	-12653,5	-11554,98	-11906,1	-13473,75
Gross margin	**6157,8**	**6447,45**	**6494,73**	**4609,76**	**466,78**

Other operating income	374,7	144,07	245,41	246,55	411,76
Distribution expenses	-304,72	-318,02	-309,69	-348,83	-307,71
Administrative costs	-107,15	-112,79	-100,63	-128,66	-115,48
Exploration costs	-308,49	-329,53	-423,45	-153,2	-576,61
Other operating costs	-1152,32	-763,36	-574,47	-684,9	-473,92
EBIT	**4659,82**	**5067,82**	**5331,9**	**3540,72**	**-595,18**
Income from investments	303,22	287,11	533,74	358,45	585,49
Interest income	0	182,77	284,22	126,59	268,55
Interest costs	-278,05	-857,12	-382,91	-550,54	-400,75
Other financial income and costs	-218,64	-97,11	-99,86	-932,25	-554,94
Financial net result	**-193,47**	**-484,35**	**335,19**	**-997,75**	**-101,65**
Ordinary result	**4466,35**	**4583,47**	**5667,09**	**2542,97**	**-696,83**
Tax on income	-736,57	-732,86	-827,76	-705,82	66,19
Net result	**3729,78**	**3850,61**	**4839,33**	**1837,15**	**-630,64**

Source: *Annual financial statements of OMV Petrom SA*

Thus, we can see that the net result consists of two main factors of influence: gross profit and tax on income. Since the tax on income is set by the state, it is an element that can be controlled by the analyzed entity in a very small extent. In this case, we will direct the commencement of the analysis to the gross income (EBT).

Regarding the gross result, there are two major factors influencing its level: EBIT and the financial result.

$$EBT = EBIT + \text{Financial result (1)}$$

From the analysis, we can easily see that the level of EBIT is found mostly in the gross result. This highlights the importance of mining activities for the analyzed entity. Regarding the financial result, with the exception of 2013 when it was positive, we can see that this has a negative impact on EBT, the negative influence being found also in the average of the analyzed years.

The calculation formulas based on which we will continue the analysis are:

$$EBIT = \text{Gross margin} + \text{Other operating income} - \text{Distribution costs} - \text{Administrative costs} - \text{Exploration costs} - \text{Other operating costs (2)}$$

$$\text{Financial result} = \text{Income from investments} + \text{Interest income} - \text{Interest costs} \pm \text{Other financial income and costs (3)}$$

1. Structural analysis of EBIT

$$EBIT = \text{Gross margin} + IANE \text{ (4)}$$

Thus, we can observe the negative influence in all the analyzed years (and implicit at the level of the annual average) of the IANE indicator on EBIT. In our opinion, there is an imbalance between the potential of the commercial activity to create value and the consumption generated by the indirect operating activity.

To observe the origin of these imbalances, we will deepen the structural analysis by studying the influence of the elements which are incorporated by IANE and gross margin.

Gross margin = Sales revenue – Direct costs of distribution – Cost of sales (5)

IANE = Other operating income – Distribution costs– Administrative costs – Exploration costs – Other operating costs (6)

1.1. Structural analysis of the gross margin

From the structural analysis of the gross margin we can observe that within it, the direct costs of distribution are almost non-existent (their size is negligible). However, the negative impact on EBT is due to the lack of power of the gross margin to cover the negative impact of the net financial result (although, in absolute value, this is also at the minimum from the period 2011-2015).

1.2. Structural analysis of IANE

This analysis highlights a relatively balanced distribution of the analyzed elements from the composition of IANE, without abrupt evolution from one year to another. However, we believe that the periods 2012-2013 and 2014-2015 are characterized by a better dynamic of the two indicators, given the tendency of increase of other operating income and the decrease in other operating expenses.

2. Structural analysis of the financial result

Net financial result = Income from investments + Interest income – Interest costs ± Other financial costs and income (7)

The analysis highlights the year 2013 as being the only year in which the financial result is positive, something which, in our opinion, is caused mainly by the low level of the other financial income and expenses. However, it is noted that the elements of income recorded lower variations than the ones of the expenditure, which provides a higher predictability of the income elements.

CONCLUSIONS AND SUGGESTIONS

The research has highlighted the profit and loss account as an element of the set of annual financial statements through which the profitability of the analyzed entities can be expressed.

We also consider that at the poor results of the years 2014 and 2015 also contributed the inadequate management of financial activities, and also the ineffectiveness of exploration

and distribution expenses. This aspect highlights the limits of the analysis of return in absolute values, but also offers the opportunity for the transition to the analisys of relative return.

BIBLIOGRAPHICAL REFERENCES

1.   Burja, C., (2011), *Factors Influencing The Companies' Profitability*, "1 Decembrie 1918" University, Alba Iulia, Annales Universitatis Apulensis Series Oeconomica, Volume 2, Issue 13, pp. 215-224;

2.   Burja, C., și Burja, V., (2014), *Key Performing Factors Of Leading Romanian Companies, Article provided by Constantin Brancusi University*, Constatin Brancusi University of Targu Jiu Annals - Economy Series, Volume 4, Issue August, pp. 6-12;

3.   Burja, V., și Voiculescu, A., (2014), *Qualitative Aspects Of Performance Evaluation Using The Example Of Romanian Economy Sectors*, Constatin Brancusi University of Targu Jiu Annals - Economy Series, Vol. Special, Issue (Month): (May), pp. 178-184;

4.   Căruntu, C., și Lăpăduşi, M. L., (2012), *Analysis of the Company's Performance Based on the Profit and Loss Account*, Ovidius University Annals, Economic Sciences Series, Volume XII, Issue (Month): 2 (Decembre), pp. 1016-1021;

5.   Camilleri, S. J., (2005), *An Analysis of the Profitability, Risk and Growth Indicators of Banks Operating In Malta*, Paper provided by EconWPA in its series Finance with number 0507021, pp. 32-48;

6.   Deaconu, S. C., (2012), *The Ranking Of Firms From Romania, Alba County Based On Theirs Turnover, Net Profit And Total Debts*, "1 Decembrie 1918" University, Alba Iulia, Annales Universitatis Apulensis Series Oeconomica, Vol, 1, Issue 14, pp. 44-55;

7.   Droj, L., (2015), *Study Regarding The Profitability Indicators For The Romanian Companies Operating In The Tourism And Leisure Services Sector In The Period Of 2010-2013*, University of Oradea, The Journal of the Faculty of Economics – Economic, Volume 1, Issue 1, pp. 817-824;

8.   Franses, P. H., et. al., (2002), Article provided by John Wiley & Sons, Ltd. in its journal Journal of Applied Econometrics, Volume 17, Issue 5, pp. 601-616;

9.   Gibson, C. (2011) *Financial and Reporting Analysis,* 12th Edition, South-Western Cengage Learning, Mason, USA;

10.   Giles, D. E., (2007), *Some Properties of Absolute Returns as a Proxy for Volatility*, University of Victoria, Econometrics Working Papers with number 0706;

11.   Grigore, M., (2016), *Particularities of Profit and Loss Account Audit and the Production Process in Constructions*, Ovidius University Annals, Economic Sciences Series, Volume XVI, Issue (Month): 1 (July), pp. 527-531;

12.   Mica, I. G., (2009), *Profitability And Risk. Essential Coordinates Of Our Existence*, Article provided by Romanian-American University in its journal Romanian Economic and Business Review, Volume 4, Issue 4, pp. 21-30;

13.   Monea, M., (2013), *The Analysis Of Revenues And Expenses Based On Profit And Loss Account*, University of Craiova, Annals of Computational Economics, Volume 1, Issue 41, pp. 14-19;

14.   Rosemary, O., (2012), *Accounting Clarity through the Proposed Two Column Profit and Loss Account; A Comparative Study of Accountants and Investors Perceptions*, Asian Economic and Financial Review, Vol, 2, Issue 8, pp. 921-934.

RATES OF RETURN AND THE RELATIVE APPRECIATION OF THE PERFORMANCE

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Abstract
The study of performance through the rates of return represents a complementary approach to performance analysis based on absolute figures, which aims to the completion of the financial performance analyzes of entities.

Thus, one of the central objectives of our approach is to put into light some patterns of performance analysis that are as much as possible modern, comprehensive, adaptable and capable of responding to the information requirements of each category of stakeholders.

The first part of the analysis regarding the rates of return as performance assessment tools aims at presenting the current state of knowledge in this sphere. The research continues with an empirical analysis based on information from a company that activates in the Romanian energy sector where we present the successive stages proposed for the relative appreciation of the performance.

Final results have confirmed the usefulness of the profitability ratios specific for the Du Pont method in the relative analysis of the performance, but also a high dependency between the proposed rates, which in our opinion is a solid premise for an integrated approach to the concept of performance, based both on absolute figures, and also on relative figures.

KEY WORDS: *rates of return, performance, Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS).*

INTRODUCTION

In general, we can say that economic performance, especially the financial one, is reflected in the profit and loss account. However, if we look at the figures and indicators (seen in practice as indicators for assessing the profitability in absolute value) from this component of the annual financial statements, we observe that they do not always have a high informational power and do not allow accurate comparisons in time and space.

Since our analysis is based on the annual financial statements of an entity, it is obvious that we focused on the efficiency of the use of capital and assets.

Research methodology

The analysis of the rates of return as an instrument for a relative assessment of performance started from studying specialyze literature dealing with this topic. Thus, based on the approaches of the specialists in the field, we were able to create an original optic regarding the concept of perfomance analysis.

For the empirical analysis we used specific methods, based on the determination of the rates of return from the Du Pont analysis and dividing them in pairs in order to emphasize the linear correlations between them. These correlations were tested first of all using the Pearson correlation coefficient and second using the factorial decomposition and calculation of the influence of each of the factors in the dynamics of each rate.

Literature review

The superiority of the methods of analysis in relative value of the financial and economic profitability is brought to light by various studies (Trandafir, R., A., and Mirea, M., 2013) who use this approach to achieve a comparative analysis between two entities working in the same field. Moreover, a study published by Conrick, C. J., (2008) shows that most entrepreneurs do not obtain from the companies in which they invest a profitability high enough compared to the risks that they take.

Since our analysis studies an entity operating in the energy sector, we believe that the utility of this study is a high one, given the general interest in this area. An essential foundation of this statement is the conclusion of the study presented by Stefan, I. O., (2012) which shows that during the financial crisis, this field is the only one that registered a positive evolution of performance. However, there are specialized studies (Mocanu, F., 2009) which, using econometric modeling, show that there is no direct relationship between the rates of return and indebtedness degree (key indicator, particularly in times of financial crisis) although the analysis focused on a period and a group of companies somehow similar to the ones mentioned above.

In our opinion, among the rates with the highest informational power we can list the ones presented by Căruntu, C., and Lapadus, M. L., (2012), as follows: return on assets (ROA), return on equity (ROE), return on sales (ROS) and the rates of return of the consumed resources (divided by type of expenditure or other specific items). Moreover, the Du Pont analysis is often used in other fields such as the food industry (Focşan, E. I., et. al., 2015) as a tool for analyzing the performance of an entity, but also the factors that can contribute to the increase or decrease of performance.

Another way of detailing the analysis based on rates of return is their factorial decomposition and the determination of the influence of each factor on the type of profitability analyzed. A good example of this is provided by Bărbuţă-Mişu, N., (2014) who highlights the extent in which the financial leverage influences the financial return of the analyzed entities.

To see how the performance of the entities from the energy sector can be perceived through the rates of return, we conducted an empirical analysis of OMV Petrom SA for the period between 2009-2015.

Results and discussions

The rates of the Du Pont analysis taken into account in the study are:

$$ROA = \frac{PN}{TA} \ (1) \qquad ROE = \frac{PN}{K_{PR}} \ (2) \qquad ROS = \frac{PN}{CA} \ (3)$$

Where:
PN – net profit;
TA – assets;
K_{PR} – shareholders' equity;

CA – turnover.

Based on the calculation of the indicators from above, we can see that all three rates of analysis use net profit as a key indicator of the profitability of the entity. Thus, based on these relationships, the rates of return taken into account in the study recorded the values presented in Table no. 1:

The values of ROA, ROE and ROS registered by OMV Petrom SA between 2009-2015
Table no. 1

Indicator	Year						
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
ROA (%)	5.12%	5.60%	10.47%	10.29%	12.44%	4.26%	-1.54%
ROE (%)	9.73%	11.11%	18.02%	16.81%	18.50%	6.98%	-2.51%
ROS (%)	10.65%	12.89%	23.05%	20.14%	26.76%	11.11%	-4.52%

Source: Author's own processing

One can easily see that in every year the evolution of the three indicators in the same direction. On the other hand, due to the fact that the net profit is a common element of all three rates of return, we can consider that the similar dynamics of the rates is determined by the high sare of the net profit in their componence.

We note that in the period 2009-2013, an improvement of the analyzed rates of return is recorded (although there is a slight correction in 2012 compared to 2011), but the situation is alarming in the years 2014 and 2015, when we see an accelerated decrease of the rates and of the relative profitability of the analyzed company. However, based on the distribution of the correlations, we concluded that each group of two indicators form a linear correlation, this leading to the choice of the Pearson coefficient in order to verify the intensity of the cprrelation between the variables. The results are shown in Table no. 2:

The value of the Pearson function for the linear correlations ROA-ROE, ROA-ROS and ROE-ROS
Table no. 2

Group of indicators	**The value of the Pearson function (R coefficient)**
ROA – ROE	0,988
ROA – ROS	0,983
ROE – ROS	0,983

Source: Author's own processing using the soft Wessa, P. (2017), Free Statistics Software, Office for Research Development and Education, version 1.1.23-r7, URL http://www.wessa.net/

The values very close to 1 of the Pearson coefficients for all the three groups of indicators suggests a very strong direct correlation. Thus, the calculation relations of the three indicators (1), (2) and (3) shall take the following forms:

$$ROA = \frac{PN}{CA} * \frac{CA}{TA} = ROS * \frac{CA}{TA} \text{ (4)} \qquad ROE = \frac{PN}{CA} * \frac{CA}{TA} * \frac{TA}{K_{PR}} = ROA * \frac{TA}{K_{PR}} \text{ (5)}$$

$$ROS = \frac{PN}{K_{PR}} * \frac{K_{PR}}{CA} = ROE * \frac{K_{PR}}{CA} \text{ (6)}$$

In order to evidence the influence of the factors on the rates of return, a detailed analysis was conducted based on the values recorded in the past two years, namely the years 2014 and 2015. The information from which the analysis starts are presented in Table no. 3:

Introducing the indicators used in the factorial analysis in 2014 and 2015
Table no. 3

Indicator	Year 2014	Year 2015	Dynamics
Net profit (mil. lei)	1837.15	-630.64	-2467.79
Turnover (mil. lei)	16537.18	13952.5	-2584.69
Assets (mil. lei)	43174.44	40894.4	-2280.03
Fixed assets (mil. lei)	37494.2	36500.1	-994.12
Current assets (mil. lei)	5680.24	4285.74	-1394.5
Shareholder's equity (mil. lei)	26315.63	25091.2	-1224.44
ROA (%)	4.26%	-1.54%	-5.80%
ROE (%)	6.98%	-2.51%	-9.49%
ROS (%)	11.11%	-4.52%	-15.63%

Source: Author's own processing based on the annual financial statements of OMV Petrom SA

A. Factorial analysis of ROA
1. The influence of ROS on the dynamics of ROA:

$$\Delta ROA(ROS) = \Delta ROS * \frac{CA_1}{TA_1} = -5,33\%$$

2. The influence of the assets turnover speed on the dynamics of:

$$\Delta ROA\left(\frac{CA}{TA}\right) = ROS_0 * \Delta \frac{CA}{TA} = -0,46\%$$

Observing the two values obtained, we conclude that the dynamics of ROA is largely due to the dynamics of ROS, something which strengthens the findings obtained from the analysis of the correlation based on the Pearson coefficient.

Due to the fact that the share of the fixed assets in the total assets is an important one in each year (it exceeds 82% in all the 7 years analyzed), we consider it appropriate to make an additional factorial decomposition of the assets turnover speed (AI) using the following model:

$$\frac{CA}{TA} = \frac{CA}{AI} * \frac{AI}{TA} \quad (7)$$

Thus, based on the presented model, we see that the speed of rotation of the total assets is also influenced by the speed of rotation of the fixed assets and by the share of the current assets in total assets.

Based on this relationship, we can determine the influence of the rotation speed of assets and of the share of fixed assets in the total assets on the dynamics of ROA.

2.1. The influence of the rotation spped of fixed assets on the dynamics of ROA:

$$\Delta ROA\left(\frac{CA}{AI}\right) = \frac{PN_0}{CA_0} * \Delta\frac{CA}{AI} * \frac{AI_1}{TA_1} = -0.58\%$$

2.2. The influence of the share of fixed assets in the total assets on the dynamics of ROA:

$$\Delta ROA\left(\frac{CA}{AI}\right) = \frac{PN_0}{CA_0} * \frac{CA_0}{AI_0} * \Delta\frac{AI}{TA} = 0.12\%$$

Thus, the analysis of these two relationships reveals that most of the dynamics of the rotational speed of the total assest is given by the speed of rotation of the fixed assets, and to a lesser extent and opposite direction by the weight of fixed assets in total assets.

B. Factorial analysis of ROE
1. The influence of ROA on the dynamics of ROE:

$$\Delta ROE(ROA) = \Delta ROA * \frac{TA_1}{K_{PR_1}} = -9.45\%$$

2. The influence of the financial leverage on the dynamics of ROE:

$$\Delta ROE\left(\frac{TA}{K_{PR}}\right) = ROA_0 * \Delta\left(\frac{TA}{K_{PR}}\right) = -0.04\%$$

The results show that both ROA and the financial leverage bring their direct influence on ROE, but these influences are of different proportions.
Regarding the financial leverage, it had a value of 1.63 in 2015 and 1.64 in 2014, removing the company from the area of excessive indebtedness. In our opinion, a level of maximum 2 (this level would be practically absolute equality between funding sources and borrowed ones) is a stable situation.

C. Factorial analysis of ROS
1. The influence of ROE on the dynamics of ROS:

$$\Delta ROS(ROE) = \Delta ROE * \frac{K_{PR_1}}{CA_1} = -17,07\%$$

2. The influence of the ratio of sharegolder's equity and turnover on the dynamics of ROS:

$$\Delta ROS\left(\frac{K_{PR}}{CA}\right) = ROE_0 * \Delta\left(\frac{K_{PR}}{CA}\right) = 1,44\%$$

CONCLUSIONS

The analysis based on rates has been shown to be a very useful and with a high informational power for stakeholders.

The usage of the rates of the Du Pont analysis revealed a high dependency between all groups of two rates (checked based on the Pearson coefficient), this being demonstrated also by their factorial analysis. The study also showed that from the three pairs of two indicators of the Du Pont method, the most closely correlated (dependent) is found between ROA and ROE, this aspect being verified based on both the Pearson coefficient and the factorial analysis.

In our opinion, the high dependence between the rates of return, and their presentation in different situations (each rate of return being approached both as endogenous variable and as an exogenous variable) highlights, on one hand the relevance of the information drawn from such an analysis, and on the other hand its limits. Thus, we consider that the cyclical dependence generated by the three rates of return analyzed forms an image that excludes other elements from the process of assessing performance. To this end, we believe that the information obtained in the analysis of profitability based on absolute figures come to complete the analysis based on relative figures, with an additional impact in the collection of appropriate information for optimal decision making.

BIBLIOGRAPHICAL REFERENCES

1.	Bărbuţă-Mişu, N., (2014), *Financial Leverage Impact On Return On Equity For Romanian Listed Companies*, "Dunarea de Jos" University of Galati, Faculty of Economics and Business Administration, Risk in the Contemporary Economy, Proceedings Conference, pp. 271-279;

2.	Căruntu, C., şi Lăpăduşi, M. L., (2012), *Measures To Increase The Rates Of Return Based On The Diagnosis Analysis On Factors*, Constatin Brancusi University of Targu Jiu Annals - Economy Series, Vol. 3, Issue (Month): (September), pp. 57-68;

3.	Conrick, C. J., (2008), *A Study of Entrepreneur and Small Businesses' Required Returns and Empirical Observation of Actual Entrepreneurial Returns Attained*, Pepperdine University, Graziadio School of Business and Management, Journal of Entrepreneurial Finance and Business Ventures, Volume 12, Issue 3, pp. 93-114;

4.	Focşan, E. I., et. al., (2015), *Du Pont Analysis In The Production And Preservation Of Meat*, Constatin Brancusi University of Targu Jiu Annals - Economy Series, Volume 1II, Issue (Month): (February), pp. 140-146;

5.	Mocanu, F., (2009), *The Influence Of Indebtedness Degree On Companies' Performances In Wholesale Trade*, Asociatia Generala a Economistilor din Romania – AGER, Theoretical and Applied Economics, Volume 05(534)(supplement), Issue (Month) May, pp. 256-260;

6.	Ştefan, I. O. (2012), *The Evolution Of Profitability Of Romanian Enterprises From Key Areas Of Activity During The World-Wide Financial Crisis*, University of Craiova, Faculty of Economics and Business Administration, Annals of Computational Economics, Volume 3, Issue 40, pp. 177-186;

7.	Trandafir, R. A., şi Mirea, M., (2013), *The Analysis of the Economic and Financial Performance Based On the Rates of Return in Hospitality Industry Companies On the Romanian Seaside*, Ovidius University Annals, Economic Sciences Series, Volume XIII, Issue (Month): 1 (May), pp. 1537-1542.

MEASURING CITIZEN SATISFACTION IN RELATION TO THE ASSESSMENT OF FISCAL SUSTAINABILITY: CAUSES AND EFFECTS DIFFERENTIATED BY SELF-EMPLOYED AND SALARIED WORKERS

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Abstract

A fiscal system must reflect a fair and redistributive level of taxation that improves progressivity and a more equitable distribution of resources that, therefore, improves social welfare. For this reason, the analysis of the degree to which these objectives are achieved by citizens is crucial to promoting tax compliance and avoiding fraudulent behavior. With this purpose, this paper assesses the degree of satisfaction of the standard of living of Spanish citizens with respect to the configuration of the country's current tax system. Given the different easiness to avoid compliance with tax obligations, we have differentiated between self-employed and salaried workers. The sample collected the opinions of 2,479 Spanish citizens obtained from the questionnaire (Likert scale 1-10) of the Barometer of the Center for Sociological Research (CIS) for the year 2016. This research uses the methodology of structural equation modelling (SEM) for explaining the degree of citizen satisfaction based on fiscal attitudes and behaviors, the assessment of its political leaders and the redistributive function of the tax system, which in turn includes the assessment of redistribution, the level of social trust and the initial economic position of citizens. In terms of effects, the degree of satisfaction is explained through the assessment of the level of redistribution and the degree of compliance or, in the opposite direction, tax fraud. The results of the initial descriptive study reveal that the level of citizen satisfaction varies between 8.46 and 6.65, being the highest the one referring to the family life and the lowest one to the level of life. At the intermediate level, we find satisfaction in the level of health (7.80) and in social life (7.76). On the other hand, the determinants of a higher level of citizen satisfaction with respect to the fiscal system reach an intermediate level in its three dimensions: social trust (4.82), redistributive justice (4.08) and initial economic position (5.20), which is valued at an intermediate level between effort, education and professional value on the one hand and family origin, contacts and luck, on the other. The most valued attitudes and tax behaviors are to be a responsible and honest person (9.36) followed by respecting the opinions of others (8.97) and not evading taxes (8.96). On the other hand, the valuation of the political leaders has a weak evaluation (4.06) since any leader surpasses the "approved". On the other hand, for the effects on the degree of satisfaction, citizens warn that the level of tax burden is excessive and that, in addition, there is no redistributive justice. Finally, they confess that their level of tax compliance is high but somewhat lower in the case of the self-employed, even though they believe that tax fraud is very high.

Keywords: *satisfaction, fiscal sustainability, fiscal fraud, redistribution, workers*

THE IMPLEMENTATION OF ACCOUNTING FOR SUSTAINABLE DEVELOPMENT ON LISTED ROMANIAN BRANCHES OF INTERNATIONAL CORPORATIONS

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Abstract

As an eastern economy, Romania is a country where market success and consumerism is playing a major role in shaping the economy. Many international corporations have opened branches in Romania in order to raise their profits and to increase their market share. However, sometimes, being focused only on personal financial gain generated imbalanced on economic growth, on social injustice and on environment degradation. So society has moved forward and, nowadays, the collective thinking must take into account the social, the environmental and the economic activities all together.

The aim of this paper is to analyze the way in which listed branches of international corporations from Romania have incorporated the sustainable development activities' in their decision making processes in both strategic and operational level of the organization. The main purpose is to assess whether the integrated accounting reporting systems provide comprehensive information on the environmental organization, the economic and the social governance for all stakeholders.

The results show that measuring sustainable development is important to raise public awareness, to be able to implement policy responses and, in the end, to provide long-term future for the society.

Keywords: *sustainable development, sustainability accounting, integrated reporting, social governance*

HOW WE SWITCH EURO AFFECTS? WHO WIN AND WHO LOSE THROUGH THE CHANGEOVER FROM ROMANIA?

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Abstract

In Romania, the consistency of macroeconomic policies and structural measures remains one of the main problems of the authorities. In particular, it is necessary to maintain the overall consistency for a sufficiently long period to ensure sustainable macroeconomic stability. Romania recognized the difficulties encountered in the monitoring of budget units decentralized fiscal situation and agrees with the need for certain legislative changes, especially in terms of direct financing of the public sector and personal independence of the members of the Steering Committee of the Central Bank. Once these sectors will meet European standards imposed problems facing will be resolved and Romania will adopt the euro.

The main conclusion that emerges from this work is that if the European Union citizen, there was a period of adjustment to the new currency for those outside the Union, the transition was more sudden and more limited; this in the sense that basically operating with the euro only do operators who engaged in import - export with the European Union and the institutions involved.

CLUSTER ANALYSIS OF TOTAL ASSETS PROVIDED BY BANKS FROM FOUR CONTINENTS

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Abstract
        The paper analysed the total assets in 2016 achieved by the strongest 96 banks from 4 continents: Europe, America, Asia and Africa. It aims to evaluate the level of total assets provided by banks in 2016 and continental banking markets degree of differentiation to determine the overall conditions of the banks. Methodologies used in this study are based on cluster and descriptive analysis. Data set was built based on information reported by banks on total assets. The results indicate that most of total banking assets are found in Asia and the fewest in Africa. At the end of 2016, the top 16 global banks owned total assets of $ 30.19 trillion according to the data set contains cluster 1 and the centroid was (2.25, 2.11, 3.06, 0.01).

Keywords: *Cluster analysis, k-means clustering algorithms, descriptive statistics, banks, total banking assets, Europe, America, Asia and Africa*

Classification JEL: M31, G21

CONSUMPTION, SOCIETY AND ADVERTISING: THE NEUROMARKETING APPROACH FOR BEST TARGETING

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Abstract

Nowadays, societies are aware of their high level of consumption, which sometimes is unnecessary and compulsive. The social environment makes the consumer to make decisions which are not always conscious. There are too many underlying factors of different nature for each one and for each different society. Nevertheless, despite of the differences, there is still a lot of uncertainty on the key factor underlining to the decision making process. The Neuromarketing in this a fructiferous field for analyzing those unconscious aspects on this process. It deals with the clients as well as their perceptions, sensations and emotions, because they are the ones that really drive the purchase intention. The new advertising issues goes hand in hand with these new neuroscience achievements. So, the goal of advertisement targets straight to the specific and key points, which dive people to increase their consumption, since they provide a service of individualized quality and unique for the customer. That is to say, in some way, the marketing of the 21st century. In this paper, we analyze the kay points that characterized the Neuromarketing science, from the point of view of advertisement effectiveness. The results underline the growing importance of this field.

Keywords: *comsumption, society, unconscious, Neuromarketing*

SESSION 4
MIGRATION, INEQUALITY, GLOBALIZATION AND SUSTAINABLE DEVELOPMENT

ACTUAL IMPLICATIONS OF MIGRATION IN EUROPEAN UNION

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Abstract
Migration flows in the European Union have intensified after the accession of countries of Central and Eastern Europe, and lately it faces a new challenge, that of the flow of refugees from non European Union countries. Evidence shows that EU developed countries face higher immigration flows compared to emigration. Under these circumstances, they developed pro-immigration policies in order to take advantages from this process. These countries also face decreasing and aging population, migrant representing a solution for these challenges, rebalancing this way the age structure of population. Migrants, especialy from outside Europe, cause problems in terms of economic integration but also social and cultural assimilation. This paper analyzes the migration flows in European Union and the evolution of the EU population as a result of policies adopted at European Union level that generate effects on the migration flows and on the economies of the host countries.

Keywords: migration, immigration, emigration, European Union
Classification JEL: F22, O15

1. INTRODUCTION

European Union migration have been amplified in the recent years, particularly as a result of measures to free movement of persons and simplifying legislation.

From a historical perspective, it is considered that at the level of highly developed EU countries, factors such as economic and political stability, development and prosperity represented attractions for immigrants from EU less developed countries or outside the EU. Some studies consider migration as a source to address shortages arising from an aging population on the labour market.

2. MIGRATION IN EUROPEAN UNION AND ITS IMPACT

Migration has high intensity in the European Union and therefore is supported through the development of economic and social policies pursuing the integration of immigrants and social cohesion. Proactive immigration policies aim at ensuring rights and

obligations comparable to those of national citizens. They seek respect for fundamental freedoms and integrity, while ensuring security in Europe (Popa et al., 2013). Integration is a complex process that involves not only institutional, but also cultural and social aspects.

Immigration in European Union has intensified in recent years, either from the EU or non-EU member states. Approximately 4% of EU residents are from non-EU countries (Eurostat, 2015).

Analyzing the relationship between emigration and immigration in several EU countries, according to Figure no. 1, it can be observed that highly developed countries such as Germany, UK, Italy, France, Sweden and Denmark recorded a higher immigration flow compared to emigration. However these countries have the highest budget amounts allocated for 2014-2020 to implement and support policies on asylum and migration. Emigration is higher than immigration in countries like Greece and Spain, especially during the crisis. This is the result of the fact that these countries have faced many economic problems, exacerbated by economic and financial crisis started in 2007-2008, which by austerity measures have led to economic imbalances and affected employment, revenue and living standards. Thus, people have identified as solution the emigration to other EU countries. Also these countries are transit areas for refugees from North Africa, Syria, Iraq, Algeria, Tunisia, Nigeria, countries facing persecution and war. In countries Romania and Poland, emigration is higher than immigration, but the differences are not high. These states are facing a higher emigration in order to achieve higher incomes and better living conditions.

Figure no. 1. Immigration and emmigration in UE, 2015
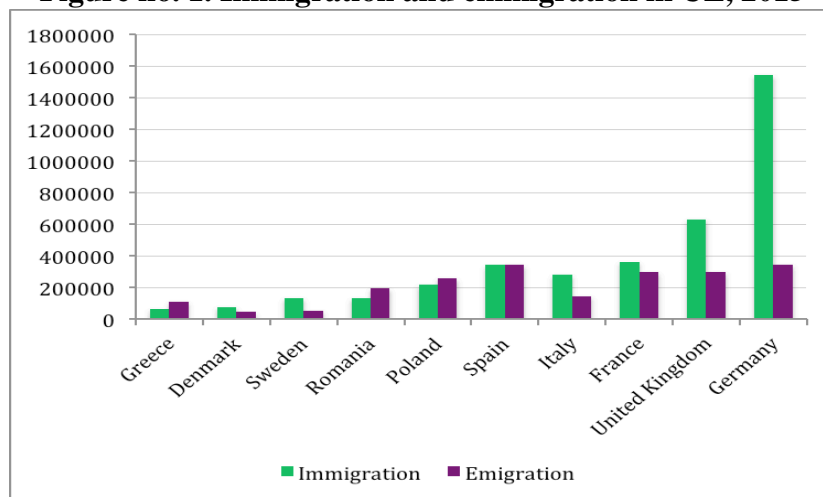
Source: EUROSTAT, 2017. *Population and social conditions*, *Immigration & Emigration*, http://ec.europa.eu/eurostat/data/database

EU supports by its policies the free movement of persons and legal migration, and each Member State policies are more or less welcoming on immigration.

Figure no. 2 shows that countries with massive immigration, such as Germany, Italy, United Kingdom face strong decrease of the population. Demographic projections in these countries show that the population is shrinking and aging. Thus, they have

implemented policies to support immigration to offset the imbalances which would appear due to aging process.

Immigration, as solution for decreasing the median age of population, is influenced by economic conditions, the level of development of the countries and their ability to integrate the immigrants. Even Spain and Greece face also a rapid decreases of population, they have a massive emigration (equal or higer than immigration) as a result of their economic context.

Figure no. 2. Evolution of population in some EU countries, 2005-2080
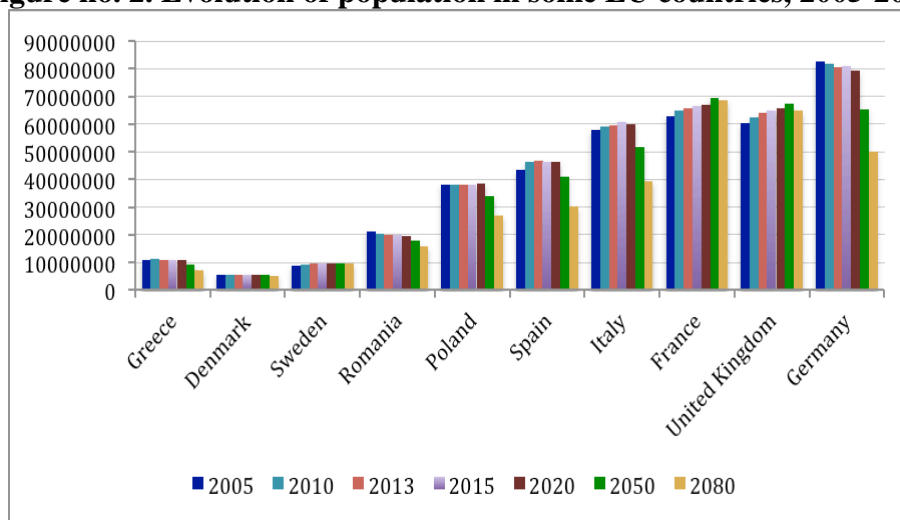
Source: EUROSTAT, 2015. *Population and social conditions, Population on 1st January & Projected Population on 1st January* (No migration variant), http://ec.europa.eu/eurostat/data/database

According to a study of European Union, without immigration in EU over the next 20 years, the effects would be: active population would be reduced by 11%, the old age dependency ratio would increase from 28% to 44 % and the percentage of youth in the total labour force would be reduced by 25% (European Commission, 2014). However, immigration can be an advantage for host countries, to the extent that it complies with legislation and immigrants can be integrate in the receiving society, both socially and culturally.

Radu M. (2006) considers that the integration of immigrants into the host society can be made in several ways. Integration can be achieved as a total assimilation of immigrants by the new society, meaning that, after 2-3 generations there are no longer visible differences between immigrants and nationals, giving birth to a new culture, as a result of combining two cultures: immigrants and nationals. Integration can be achieved gradually but without completely abandoning cultural identity.

Thus, immigrants maintain links with the countries, cultures and religions of origin and can influence host culture, although the immigrants adapt easily to changes than the host country population.

3. CONCLUSIONS

Recently, large flows of immigrants from inside and outside of European Union raise issues about the possibilities of their economic, but also social and cultural integration. Countries experiencing the largest flows of immigrants have the highest level of development in the EU (e.g. UK, Germany, France). For those, immigration can be used to alleviate the demographic problems faced by almost all EU member states, namely the reduction and demographic aging. Consisting in working age population, migration is considered a solution to support aging generations and, therefore, these countries adopt favourable policies for certain periods referring to migration. Beyond the positive effects, migration raises issues related to cultural integration of migrants and security, which may represent a risk, especially with regard to non-EU migrants (and especially outside Europe), assimilation of migrants being a long process, regardless the origin of citizens.

Some European Union countries recorded higher flows of emigrants compared to immigrants (e.g. Spain, Greece) as a result of austerity measures imposed by the economic crisis.

Both sending and receiving countries, may face risks related to migration. For the first category, problems may occur due to integration or assimilation of migrants and for the second one, the problems are related to the loss of a part of the workforce, under unfavourable demographic conditions. Therefore, regardless which migration flows are higher, immigration or emigration, the migration phenomenon must be carefully approached.

SELECTIVE REFERENCES

European Commission, 2014. *Migration and asylum*, The European Union Explained, Available online at: http://bookshop.europa.eu/en/migration-and-asylum-pbNA0614045/?CatalogCategoryID=sciep2OwkgkAAAE.xjhtLxJz

Eurostat, 2015. *Migration and migrant population statistics*, Available online at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics

Eurostat, 2017. *Population and social conditions*, *Immigration & Emigration*, Available online at: http://ec.europa.eu/eurostat/data/database

Popa M., Ungureanu D., Oneașcă I., 2013. *Politica de migraţie a Uniunii Europene: implicaţii pentru piaţa muncii*, Editura Alpha MDN, Buzău, România

Radu M., 2006. *Politica şi practica privind integrarea imigranţilor şi refugiaţilor în statele europene*, Revista Calitatea Vieţii, 06/7 2006, Available online at: http://www.revistacalitateavietii.ro/2006/CV-3-4-06/7.pdf

GLOBALIZATION, MIGRATION AND BRAIN DRAIN: THE CASE OF ROMANIA

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Abstract
Migration is an old phenomenon in the history of mankind. However, the magnitude, complexity and structure of migration flows in the global era are all unprecedented. According to the United Nations Report Trends in International Migrant Stock: the 2015 Revision in 2015, at world level, were recorded 244 million international migrants. With the increase in the number of migrants, the emigration of 'high-skilled' individuals is also growing. OECD and United Nation Statistics show that in the last decade the number of migrants with tertiary education increased by about 70%.
Brain drain is also a well-known phenomenon. Highly educated individuals and scientists have travelled the world in all centuries in search of better study and research, and working conditions, and of new opportunities. Nowadays, in the era of globalisation and, implicitly, of swifter development of international markets, the emigration rate of high-skilled experts exceeds the total emigration rate, which shows the selectiveness of migration at educational level.
The paper presents a brief analysis of the interdependencies between migration and globalisation and of the effects of globalisation on the migration of high-skilled individuals. The trends, structure and volume of high-skilled labour force from Romania are analysed along with the effects generated by them.

Keywords: *migration, globalisation, brain drain, labour market, youth.*

Classification JEL: E24, F22, I21, J13, J21, J31, J61-62, J82, O15

1. INTRODUCTION

By and large, globalization is a dynamic process of intensifying and interconnecting international relations that trigger long-term structural changes at technical, economic, political, and socio-cultural level and at the environmental one, as well.

An essential dimension of globalization is the swift increase in various cross-borders flows: trade, finances but also ideas, ideologies, knowledge about democratic and economic governance, cultural information, media products and people (Castele and Miller, 2009) all of them consolidating and mutually reinforcing.

International migration is a phenomenon that might be regarded as old as history itself. However, in the last few decades, the economic, social and cultural interconnectedness (related to the concept of 'globalization') facilitated the migration of an increasingly higher number of people, characterized by the high variety of both migration flows, and of the distance between the countries of destination and the countries of origin.

In this respect, Sare (1992) argued that the contemporary geography of labour force migration reflects the globalization of the world economy and of the labour force markets while an increasingly higher number of countries turned into participants to the migration systems at world level.

In this context, the United Nations statistics show that in 2015, at world level, were 244 million migrants, from which about 58% headed towards developed regions, and that in the period from 1990 to 2015 the number of migrants at world level increased by over 91 million individuals.

Lacking jobs, economic underdevelopment, the low level of wages, overproduction and underuse of experts, lacking research and endowments, employment discrimination, precarious endowments, lacking scientific culture and traditions, dysfunctional institutions, or the wish for higher skills and acknowledgement contribute to the increasing numbers of high-skilled emigrants during the last decades.

At European Union level two distinct trends may be highlighted with respect to high-skilled workers migration: professionals and scientists who are citizens of the European Union and migrate outside it, thus triggering a brain drain bt also an immigration of citizens from outside the EU who have mobility within the member-states and contribute thus to brain gain for the Union; an intense migration phenomenon of high-skilled experts from central and south-eastern Europe to western Europe countries.

One of the issues faced currently by Romania is generated by the late start in the globalization competition. Only after 1990 and by modest steps, the information society began penetrating our country. As the borders were opened and more new rights and freedoms were available, the migration phenomenon turned more accessible to those eager to turn into adventurous protagonists of the mobility. In just a short time, Romania turned into a state with emigration as mass-phenomenon, its citizens leaving the national territory in favour of permanent or temporary residence in more developed western countries. If up to 2006 the Romanian migration was characterised by a considerable part of the temporary/definitive migration for labour being represented by individuals with at most secondary studies, once Romania accessed the EU on 1 January 2007, a major change occurred regarding the profile of the Romanian migrant. This new migration wave for labour had and has as particularity *the mobility for labour of professionals in the context of the economic-financial crisis which seems to set up the foundations of the skilled- and highly-skilled personnel migration for labour.*

2. IMPACT OF GLOBALIZATION ON MIGRATION

Migration is a phenomenon born almost at the same time with the history of mankind, as people always left their region of birth in searching for better economic opportunities, both inside and outside their native country.

The increased social, economic and cultural connections between countries, the progresses in the transportations' field, and in the one of information and communication technology, or otherwise said the globalization phenomenon facilitated the migration of an increasingly higher number of individuals, as the phenomenon diversified regarding structure and sizes of migration flows. Under the conditions in which economic globalization exacerbates inequalities among nations, for many individuals migration is not an option, but a economic necessity while in the last 5 decades international migration

accelerated and diversified from the viewpoint of origin countries and countries of destination.

Almost over two-fifths of the world population migrates to Europe and North America, so that the United States of America, Canada, and Western Europe turned into some of the most sought after destinations for international migrants.

Large part of this immigration is triggered by economic factors especially lacking jobs in the country of origin, wage differences between countries. Immigration, especially of the working age population has beneficial effects for the host countries by increasing the labour force potential, thus compensating to a certain extent the low participation of the native population on the labour market. On the other hand, each immigrant entering in the new country is a consumer and makes use of all types of services and goods, and in this manner demand and hence jobs are created.

The social networks developed by migrants intensify the links between the regions of origin and the ones of destination. If we consider the observation of Sassen (1999), who considers that individuals travelling and moving from one region of the world to another are the ones modelling the material and spiritual culture of the places, then we might state that migration should be regarded as an important component of globalization just as trade and finances.

High-skilled international migration known in the field as *"brain drain"* has known a higher intensity in particular after the end of the Second World War. The brain drain has both negative and positive effects on the country of origin. The migration of high-skilled individuals diminishes the growth potential of the country of origin and the welfare of those left behind.

Another negative effect generated by brain drain is that after they leave, they no longer pay any taxes in their country of origin. Education is subsidized partially or entirely by the Government, and high-skilled emigrants may leave before paying their debts to the society, a fact that leads to diminished supply of public education.

The emigration of experts in important fields of the society (engineers, physicians, IT, etc.) undermines the capacity of a country to adopt new technologies or to face crisis within the health system. Most times, brain drain increases the technological gap between host countries and countries of origin because the concentration of human capital in most advanced economies contributes to the technological progress of the latter.

Brain drain might have *beneficial effects* for the countries of origin. Remittances, circular migration, participation of high-skilled migrants to business/innovation networks and technological transfer, including possible effects on human capital formation in countries of origin are but few of the beneficial effects of brain drain. However, recent researches in the field suggest that the beneficial effects of the high-skilled individuals who emigrate are limited for the development in their country of origin.

3. BRAIN DRAIN REASONS IN THE EUROPEAN UNION

Free movement within the EU is one of the fundamental rights of the citizens in the community area. Linguistic barriers for high-skilled professionals are not a considerable hindrance and problem, as they find easily employment opportunities in the entire European Union.

The brain drain towards the western area of the Union increased during the last years. For instance, in the period 2006 – 2010, Germany received a large stock of immigrants consisting of managers and high skilled public servants, individuals with superior skills in the educational and social field, engineers and scientists, artists and journalists, etc. also, the number of youths who began tertiary education in Germany increased: over 7500 Bulgarian students, 7500 students from Poland, 4500 from Spain, 4300 from Italy and about 3100 Romanian students (Düll, 2013). Romania and Poland are the most affected member-countries from the Eastern Europe regarding brain drain (L. Ionescu, 2014).

Low wages, expenditures for education as well as a low GDP/capita are triggering push factors for brain drain inside the EU. To these are added the high rates of unemployment among youths from southern and Eastern Europe and this is determinant for their decision to seek for occupational opportunities abroad. With an unemployment rate among youths with ages between 20-24 years in 2015, of 48,8% in Greece, 35,8% in Spain, 34,4% in Italy, 30,2% in Portugal, 23,2% in Romania and 17,7% in Bulgaria, youths with higher education migrate out of necessity and not by choice.

Even though in a theoretic perspective, labour force mobility is one of the basic mechanisms of economic equilibrium, still the migration of high-skilled human capital from certain countries/regions of the European Union to other countries of the region might have on long-term the effect of increased economic disparities between member-states. The relative economic effects depend on the size, speed, intensity and structure of migration flows with respect to the age and sills of immigrants (Straubhaar, 2000).

The brain drain from Eastern Europe created specific deficits on the labour force market especially in the field of medicine, science and research, and IT.

Next to the economic effects, brain drain generates also negative social effects. The loss of high-skilled professionals in the field of medicine, social services and education might have severe negative social effects in the affected countries. As only a small number of experts available, the quality of education and services is strained and this affects directly the citizens.

As result, it could be said that by brain drain intellectual, scientific, economic and cultural potential is lost, but also fiscal losses are registered as well which reflect on social solidarity. The taxpayers from the emigrants' countries of origin paid for the education costs of the emigrants and will also pay for their care when these emigrants will grow old (Ailenei, D., 2009).

On the other hand, for the countries of origin, there is a series of advantages related to the migration of high-skilled individuals, respectively the value of remittances, the creation of scientific and business networks, as well as the possible return migration and the contribution of additional competences gained abroad.

Mayr et Peri (2009) suggest that the possibility of return migration is an incentive for increasing the schooling degree which compensates to a certain extent the negative effects of brain drain. The intention of seeking for employment opportunities abroad increases also the aspiration for better education. As result, an increase is noticed in the numbers of individuals with higher education, thus augmenting also the probability of a higher number of tertiary education graduates remaining in the country of birth.

4. BRAIN DRAIN FROM ROMANIA UNDER THE CONDITIONS OF GLOBALIZATION

The free movement of individuals, goods, services, capital and knowledge (including, or in particular scientific-technological knowledge), the unhindered participation to the world circuit of values is a benefit for Romania resulting from the globalization process.

From among these, the free movement of individuals and knowledge represents a great achievement for Romania, considering the restrictions in these fields in the period from 1945 to 1989. But, at the same time, disadvantages emerge as well, such as migration, one of the most widely debated topics at national and international level.

If, up to the year 2006, the characteristic of the Romanian migration was to the largest extent, the temporary migration of individuals with at most middle-skills for labour to western countries, once Romania accessed the EU on 1 January 2007, a major change occurred with respect to the profile of the Romanian migrant. Without a spectacular increase in numbers, the flow of migrant Romanians seeking jobs in Europe gained a particular characteristic with respect to content. In a new European framework,, a certain professional segment of Romanian labour force migration became (and continues to be) interesting for the western and northern markets of the European continent, but also for other destinations. This segment is constituted out of higher-educated individuals and health-care personnel increasingly more accepted and requested for their expertise on the labour markets from the economically developed countries of the European Union, the United States as well as for other countries.

The data made available by the National Institute of Statistics regarding emigration reflects Romanian migration only according to countries of destination and age groups, thus lacking information that would describe the emigration according to the educational levels.

Even though no official data regarding the numbers of Romanians abroad exist, the figure is placed somewhere around 3 to 4 million individuals, which places Romania in the European top of migration, and not only.

Most of the Romanians went abroad due to the lacking jobs or to the significant decrease in their incomes. The Romanians who went to work abroad have, in general, secondary education or skills gained by vocational training.

The main reasons for brain drain are related to: lacking jobs, better economic perspective, the underuse of experts, lacking research facilities, the purpose of achieving higher-skills and social acknowledgement, a better education system and improved opportunities for professionals.

According to the Report of the Romanian Court of Accounts, "Analysis of the substantiation and evolution of the situation regarding the objective of increasing the share of higher education graduates in accordance with the provisions of the Europe 2020 Strategy", the number of Romanian migrants with higher education in the period 1997-2013 estimated on the basis of a determinist model is placed around 480 thousand individuals. As result, Romania lost a substantial part of the higher-educated and skilled labour force and the process is far from becoming attenuated in the future. The migration of high-skilled individuals meant less pressure on the labour force market, but at the same time contributed to the process of its de-structuring: some fields began to feel already an acute labour force deficit with respect to high-skilled and trained workforce.

Romania's efforts to school at higher level the young population is annihilated to a good extent, by the migration of high-trained and skilled individuals, mainly to EU member-countries. In other words, Romania spends considerable amounts from public and private sources for their superior schooling, yet the benefits of these financial efforts are externalised. In this context, Romania 'subsidises' the higher-skilling of the European labour force.

5. CONCLUSIONS

Globalisation and internationalisation of the markets trigger new sizes and components of the migration flows.

Brain drain from some European countries/regions to other ones is a perilous phenomenon, as on long-term it might lead to economic stagnation, productivity and living standard decreases, and major imbalances between countries/regions.

The migration of high-skilled individuals from Romania is a new phenomenon, still insufficiently analysed and with major deficits regarding statistical data which hinders the satisfying research of its characteristics and contents, the positive or negative effects it might generate on the society in general, and on the local communities in particular.

The behaviours, attitudes and values of this new category of migrants are not the same with the ones of the middle-, low-skilled or unskilled workers. The wage of a physician or researcher even if low, will still be high enough for 'family reunion' abroad. On the other hand, the participation of high-skilled migrants to the remittances phenomenon which was very positive in Romania during the last decade does not seem to achieve the same levels lately. On the other hand, the migration of high-skilled individuals for labour might change to definitive migration much easier than the migration of the previous waves.

The losses at society's level due to the migration for labour, or definitive migration of the high-skilled individuals must be understood in the wider context of the damages encumbered by the loss of a higher educated and professional resource for which higher skilling costs were necessary.

REFERENCES

1. Ailenei, D., *Dimiuarea inegalităţilor – condiţie esenţială a coeziunii economice şi sociale*, http://www.coeziune.ase.ro, 2009.
2. Castles, S. and Miller, M.J., *The Age of Migration: International Population Movements in the Modern World* (4th edition). Basingstoke: Palgrave MacMillan, 2009.
3. Düll, N., *Geographical labour mobility in the context of the crisis: Germany*, European Employment Observatory, 2014, http://www.eu-employment-observatory.net
4. Mayr, K. and Peri, G., *Brain Drain and Brain Return: Theory and Application to Eastern-Western Europe* in Berkeley Electronic Journal of Economic Analysis & Policy, Contributions. Vol. 9: Issue 1, Article 49, 2009
5. Saskia, S., *Globalization and its Discontents: Essays on the New Mobility of People and Money,* New Press, 1999.

6. Straubhaar, Th., *International Mobility of the Highly Skilled: Brain Gain, Brain Drain or Brain Exchange*, HWWA Discussion Paper No. 88, Hamburg, ISSN 1432-4458, 2000.
7. United Nations, *Trends in International Migrant Stock*: *the 2015 Revision* (United Nations database, POP/DB/MIG/Stock/Rev.2015). www.unmigration.org

CORPORATE INTEREST IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

   Lately globalization is felt increasingly stronger global Its main feature is an expansion and significant influence of multinational companies in the global market. Their sizing is directly proportional to their influence and interests. These economic entities are real forces that can not be ignored in today's world and the obvious problem of sustainable development can not be addressed independently of the phenomenon, context we also identified some possible solutions to conflict of corporations and essence of the concept of sustainable development.

Keywords: *sustainable development, multinational corporations, social responsibility, interest, profit*

Classification JEL: O11, O44.

1. INTRODUCTION

   In recent decades, the image of the international business environment has changed significantly. Studies conducted by UNCTAD shows that corporate phenomenon developments in the world economy is growing.

   Without claiming to present an exhaustive topic so vast we tried to capture some "facets" of sustainable development from the perspective of multinational corporations, given the expansion of these economic entities and strengthening their power in the global economy. We presented more negative aspects of the actions of multinational corporations in terms of sustainable development, it is very important to know both sides of the coin, which will not only help transnational giants including release.

   During the research method is used mainly deduction, analysis, abstraction and sampling.

2. SEEN CORPORATIONS PERSONALITIES

   Lately globalization is felt increasingly stronger global Its main feature is an expansion and significant influence of multinational companies in the global market. Their sizing is directly proportional to their influence and interests.

   MNCs tend to pay or should pay particular importance to sustainable development, implementing the requirements and policies established at the headoffice. One of the

phrases used to describe the concept of the corporation is given by Richard Robbins as "nothing but a social invention of the state."

Over time a number of personalities expected to some extent the consequences of the territorial expansion of multinational corporations. We remember a statement that did Abraham Lincoln on the fact that corporations are "glorified" and that their work will be preceded by the advent of an era of corruption at the highest levels and rule them will extend even if many people will be harmed.

Regarding to social responsibility, we can not overlook a remark by Milton Friedman, who says that "the only social responsibility of a company is to use resources for profit, respecting the rules, but without prejudice to others, respecting competition laws and without resorting to fraud ". However, it is difficult to believe that it is possible that a multinational company to comply with all laws and acquire a great profit.

3. CORPORATIZATION AND SUSTAINABLE DEVELOPMENT

The issue of sustainable development has been discussed in recent years by most international organizations, scientists from different fields and different institutions at local, regional or national level and had an impressive impact on the whole world. So all economic activities should consider adopting sustainable development principles in terms of three-dimensional, ie the economy, the environment and the social and cultural dimension on which they work.

Increasingly in recent years, the company puts corporate interconnection problem with the concept of sustainable development.

The phrase "sustainable development" has several definitions and approaches, but the most used is the definition given by the WCED (World Commission on Environment and Development): "Sustainable development is development that aims to satisfy the needs of the present without compromising the ability of future generations to -and meet their own needs ".

The current problems are discussed worldwide in terms of sustainability, as I mentioned before, are related to corporate social responsibility multinational concept that has become known since 1970, although various aspects related concept they were included in the scope of organizations and governments since the nineteenth century. The problem of environmental pollution has made since he held the Industrial Revolution in England, but great importance began to be given only from the second half of last century, considering that most come have multinational corporations, especially the industry.

4. PUBLIC RESPONSIBILITY AND CORPORATE SOCIAL RESPONSABILITY

The main concern of the company is to generate profit. But companies need to understand that not only act in a market. They act also in a certain culture, a community and a political system. Multinational corporations have a significant impact on social development in the areas where they operate. Therefore, they have a responsibility that extends beyond a simple algorithm on profit. There may be, for example, multinational

corporations that are profitable in financial terms, but whose activities are detrimental both to employees and the community or the environment.

Based on issues such as corporate social responsibility, environmental pollution and workers' rights, we sought to counter official statements.

Pollution of the environment, social responsibility, workers' rights - all these aspects of sustainable development are interconnected, you can not respect one puddle leaving the other two. Once you break the rules of creating damage, in some cases, enormous you can not "wash your sins" respecting one or both of the other two remaining.

What I want to point out is that multinational corporations should bear in mind the objectives of their business development, sustainable development principles involved. Thus, their work will become prosperous both in terms of a viable economic entities in the corporate and who show responsibility for individuals.

5. CONCLUSIONS

The conclusion is that these economic entities are real forces that can not be ignored in today's world and the obvious problem of sustainable development can not be addressed independently of the phenomenon, context we also identified some possible solutions to conflict of corporations and essence of the concept of sustainable development.

6. REFERENCES

1. Barnet, J. Richard - „*Stateless Corporations: Lords of the Global Economy", în „The Nations"*;
2. Daly, E. Herman - „*Sustainable growth: An Impossibility Theorem* ", Development -- A Journal of the Society for International Development;
3. Friedman *,* Milton - *„ Capitalism and freedom",* The University of Chicago Press , Chicago, 1982;
4. Hristea, Anca Maria - „Responsabilitatea socială corporativă – între deziderat şi realitate", Economie teoretică aplicată, volumul XVIII, 2011;
5. Roach, Brian–„ *Corporate Power in a Global Economy",* A GDAE Teaching Module on Social and Environmental Issues in Economics, Global Development And Environment Institute, 2015
6. Shaw, H. Archer – „ *The Lincoln Encyclopedia*", U.S President Abraham Lincoln: Scrisoare către Col. William F.Elkins (Nov 21, 1864), Macmillam, NY, 1950
7. Toffler, Alvin– „*Al treilea val*", Editura Politică, Bucureşti, 1983
8. World Commission on Environment and Development Report*, (Brutland Commission1987)*

SUSTAINABLE DEVELOPMENT – HUMAN DEVELOPMENT CONNECTIONS IN THE POST-TRUTH ERA

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Abstract
Following the distancing of current policy from economic rigors and ethical demands aimed at redistribution of wealth, modern societies are parasitized by post-truth of actual facts. It distorts the shape and content of general interest data, for example political distortion of scientific evidence proving anthropogenic climate change. Under these circumstances, the question "to what extent economist's truth stating what you cannot measure you cannot manage is sustained?" becomes absolutely legitimate. Regarding sustainable development management, monitoring the degree of achievement of Sustainable Development Goals is no longer sufficient to track progress in this area. Therefore, experts propose to introduce as much as possible qualitative data which, combined with quantitative data, will enhance their relevance and make them harder to be diverted for political purposes. This paper follows this direction, trying to prove that protection of data's real meaning can be achieved by systemic analysis of all data originating from monitoring certain processes, which can be aggregated, with applicability in sustainable development. Thus, analyzing together data on sustainable development and those that indicates the state of human development emphasizes on one hand, the intrinsic link between these concepts and, on the other, maintain the sense of sustainability even in the post-truth era.

Keywords: *sustainable development management, human development; post-truth, Sustainable Development Goals (SDGs); Human Development Index (HDI).*

Classification JEL: Q01, Q56, Q 58, B41

1. INTRODUCTION

Starting from the basic premise that, at least at the present time, the concept of sustainable development is the best driver-both theoretical and as comprehensive analysis of economic factors in an expanded and strengthened human horizon-the main objective of this paper is to test the resilience of sustainable development to post reality policy.

With regard to sustainable development, the general tendency of manipulation, mainly through the media, characterized in the post-media truth by highlighting some alternative facts (of secondary relevance), manifests itself, for example, by trying to belittle the importance of increasing environmental resilience.

In conclusions to this study, we propose a method different than those devoted to strengthening the objectives of sustainable development, through integration of human development parameters which, in the end, can lead to a methodological aggregation.

2. PAPER BODY

False alternatives to sustainable development

Regardless of the positions they take toward use in economics of notions like progress, development, growth, value, etc., economists are in consensus that an interruption of economic growth is not acceptable since it would actually lead to denial of sustainable development and emergence of an unwanted generalized forms of sustainable poverty (Melamed and Ladd, 2013).

With this apparent incompatibility sustainable development of capitalist interests had to give ground and accept some compromise political solution, taking into account that transition to radical solutions would require a level of civic culture unattainable in short term (and even medium term). Thus sustainable development recognizes the need for immediate action against the demographic explosion, in the context of resource depletion and climate change, accepting, however, terms and conditions that are imposed by the market economy.

Figure 1: Relationship between Sustainable Development and Green Growth
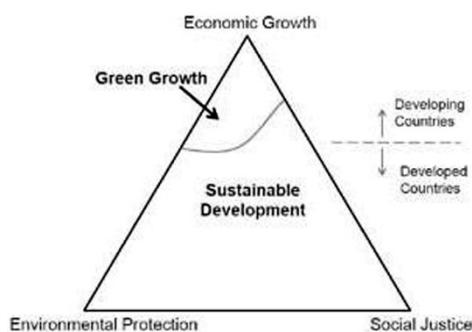
Source: Desai R., 2013.

Another challenge for sustainable development on interdisciplinarity grounds came from green economy, conceived as a set of social, economic and environmental relations clearly representing the concern to maintain a clean environment (Desai, 2013).

Sustainable features of human development

From holistic perspective, human development represents humanization of sustainable development by switching from global issues to individuals, which highlights perception level (and, implicitly, of satisfaction) and participation in creating personal and social well-being.

Human development corresponds to increased need for citizens to participate actively in the political life of their societies, in support of a fair and moral guidance, seeking balance between respecting individual freedom and collective security. Based on these considerations, sustainable human development is considering not just a development that generates economic growth, but a redistribution of wealth in an equitable manner,

respect for the environment and list but not last promoting sustainable solidarity (Moşteanu and others, 2014).

On the other hand, the current global context is not under the best possible circumstances for sustainable human development, because human features binding it - self-determination, social responsibility and willingness of civic involvement - are undermined by propaganda of alternative facts, initiated from the need to maintain social tension in order to control access to resources and their redistribution.

Development connections under the aegis of sustainability

Although we are dealing with two paradigms (apparently) different, whose integration has not been fully realized, sustainable development and human development complement each other, meeting at most important point, namely acceptance worldwide and thus, transposing them into national and international policies. Also, in both concepts - the sustainable human development and the sustainable development - the emphasis is on sustainability, which connects them.

Because sustainable human development means essentially extension of people background liberties of contemporary generation, fairly, to future generations, it assimilates naturally 2030 Agenda objectives. Thus, the sustainable human development arises a process that eventually leads to responsible holistic management of humans in relationship with the environment, while promoting this vision, beneficial to mankind (Naik and Bagalkoti, 2015). It follows that sustainability allows both sustainable development and human development to become two sides of the same universal ethics that claims life in a high quality standard (Jahan, 2015).

Of course, reaching the necessary consensus, not only for acceptance but also for internalizing human sustainable development throughout society, goes through orientation of citizens' attitude and behavior towards a culture of solidarity and efficient management of all related processes (Niţu and Niţu, 2009).

Aggregation of sustainability prospects

Although they were initially draw top-down, having as starting point the need to find methodology appropriate for overall interpretation (not just economic) of limitation of current generation wellbeing, so that it does not compromise the one of future generations, indicators measuring sustainable development on societal level currently complies with requirement for bottom-up approach by allowing analysis of each indicator composing the overview of society placement towards sustainable development.

Links between these two concepts are mutually reinforcing both on pillars of sustainable development as well as on the idea that SDG conception is based on elemental analysis of human development, while sustainable development is enriched by qualitative elements contained in evaluation of human development.

Secondly, SDG indicators can be used with human development indicators in order to refer progress in both directions.

Figure 2: Links between Dimensions of Human Development and SDG approach
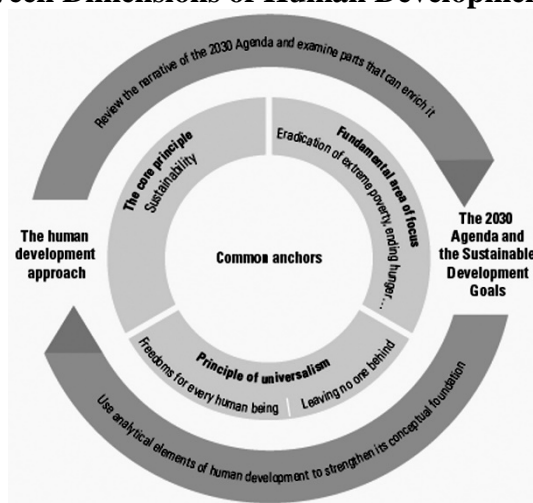
Source: UNDP, 2017.

Similarly, in terms of human development, SDG can be supplemented with several new indicators which convey even better individuals interest for sustainable development.

3. CONCLUSIONS

Post-truth era has already become a reality of our contemporary culture, dominated by conflicts likely to radicalize and threatening the very foundation of our values by developing alternative approaches (Keyes, 2004).

Thus, highlighting the connections between sustainable human development and sustainable development (inside and outside its core) has the gift to keep these fundamental forms of development on the path required for sustainability. Therefore, human development, mainly through its aspects concerning unity and solidarity across borders, becomes an element of strengthening sustainable development relevance.

REFERENCES

1) Desai R., Economic Development vis-à-vis Environment, http://drrajivdesaimd.com/2013/09/02/economic-development-vis-a-vis-environment/, 2013;

2) Jahan S., Human Development Report 2015. Work for Human Development, Published for the United Nations Development Programme, http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf, 2015;

3) Keyes R., The Post-Truth Era: Welcome to the Age of Dishonesty, St. Martin's Press, 2004.

4) Melamed C., Ladd P., How to build susrainable development goals: integrating human development and environmental sustainability in a new global agenda, The Overseas Development Institute, 2013, https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8290.pdf., 2013;

5) Moşteanu D., Hihăilă-Lică G., Halmaghi E. E., Moşteanu R., The Sustainable Development - Human Development, Revista Academiei Forţelor Terestre Nr. 1

(73)/2014, p.106-113, www.armyacademy.ro/reviste/rev1_2014/MOSTEANU.pdf, 2014;

6) Naik A. D., Bagalkoti S. T., Human Development and Sustainable Development: a search for Integrated Path of Development, Golden Research Thoughts, vol.IV, ISSUE 9, March 2015, 3., http://aygrt.isrj.org/colorArticles/5295.pdf, 2015;

7) Niţu L., Niţu L., A Management System for Sustainable Development – A New Challenge, Romanian Association for Quality, https://www.researchgate.net/file.PostFileLoader.html?id=5757b9b9404854df17343dd3&assetKey=AS%3A370590084026370%401465366969780, 2009;

8) United Nations Development Programme (UNDP), Human Development Report 2016. Human Development for Everyone, http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf, 2017;

THE EUROPEAN AND ROMANIAN MIGRATION CONUNDRUM

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Abstract The European Union is one of the world's regions with an increased attractiveness degree for migrants from the entire world in the present troubled geopolitical and economic context at international level due to its economic development, social and political stability which are all mirrored in the living conditions and the quality of life from the developed countries of the EU. The Lisbon Agenda proposed the change of the EU in one of the most attractive regions for working, studying and researching. Almost 20 years after this ambitious Agenda, Europe is faced with the challenges of uncontrolled migration, that led to numerous critical attitudes and to increased risks for the entire Euro Area, associated with the absence of some formal and informal institutional structures in the economic and social field that would build up operational mechanisms for solving multiple challenges. Romania, as member-country of the EU is faced with several demographic risks and the risks of continuing human capital and labour force depletion as result of the process of labour migration. However, the most concerning phenomenon is the one of migration for education reflected in the massive migration of the young and working age population.

The present paper intends a brief presentation of the main challenges at EU and national level, as well as an analysis of the links between migration and institutional arrangements in the field of education and labour market contributing to this phenomenon.

Key words: migration, institutions, demographic risk, education, labour market
JEL Classification: F22, I21, I23, I29, O17

1. Introduction

Migration is one of the most complex phenomena with roots both in economy and sociology, and the relationship between these two dimensions, from an institutional viewpoint seems currently the more necessary, as the migration wave by the end of the 20th century and the beginning of the 21st century tends to change the known political and economic environment.

The main conundrums are associated with demographic ageing and the need of managing and compensating demographic change. However, if we analyse attentively the evolution of the demographic natural increase we find that it is positive at the level of EU-28(27) and negative at the level of Romania. The caveat is associated with the data scarcity for Romania, regarding the number of Romanians who migrated either definitively or temporary, and with respect to the unsatisfying management of the types and motivations of migration at national level, in particular for young individuals. The second major challenge is to exceed the uncertainties of the post-crisis. The third one is to ensure the optimum balance on the labour market under the conditions in which the industrial transition, and in general the transition of the economy has contributed to increased and stronger jobs' polarisation and the disappearance of 'traditional' workplaces. Finally, the fourth challenge is related to the migration phenomenon itself, and the implications it has on optimum management and calibration of the economic and social institutions associated with the phenomenon, as the necessity of reconfiguring some of these institutions to meet the challenges of the 21st century is anticipated currently by increasingly more experts. (Freeman, 2008).

One of the best documented types of migration in studies and analyses is the migration for labour based on superior economic expectations than the ones that can be provided by the

national economy at a given moment. The impact has been studied extensively in the specialised literature (Baas, Brücker, 2009), in particular for the countries of destination, but much less debated is the impact for the same periods of time with respect to the countries of origin, as few information, data and documentation exist that might serve the purposes of an institutional analysis (Bertocchi, Strozzi, 2008). However, there are several debates underpinning the intensification of circular migration, and the contribution of value added knowledge, of higher-skills also for the countries of origin next to the countries of destination (Zimmermann, 2014; Newland, 2009) while European perceptions regarding migration from Central, Eastern and South- Eastern Europe continue to mirror distorted images, contradicted by statistical data (Sobotka, 2010; Kahanec and Zimmermann 2010)

In Romania, the impact of migration on main outcomes of the economy and society are triggering increasingly the pressing necessity of (re)modelling policies dedicated to the – potentially migrant – human capital. The institutional viewpoint (in the present paper institutions are understood according to the meaning promoted mainly by North, 1990) and the institutions' impact on the migration phenomenon (Bertocchi and Strozzi, 2008; Arpaia et al. 2012) needs to be included within the concerns of experts because of the mutually reinforcing relationships established between migration and the essential and determinant components of economic growth, competitiveness, and development. One of the noticeable displays of this trend is the recent migration for education from Romania, which includes increased risks related to: demographic changes, human capital competitiveness, active labour force, etc. Young individuals opting for higher-education in the developed member-states, or who have finalised their higher-education migrate in order to finalise their master/doctor studies, or for scientific, research-development purposes. They are the ones who often forego returning in the country or, if they return, they return for limited periods of time. This 'wave of young individuals seeking educational and/or career development' is a phenomenon on increase at the level of our country since the accession to the European Union. Hence, this migration for education has all the features of a phenomenon indicating unfavourable institutional developments at national level, and even highlights the institutional arrangements and frameworks that fail in satisfying the expectations of the generations born after 1989.

The paper is intended as a brief analysis of this migration for education phenomenon by stipulating firstly a caveat: these are all estimates as national statistical data, including Eurostat data do not provide for a complete image, and information is collected from various other sources from country and abroad.

2. Evaluation of the national emigration and immigration – an institutional viewpoint

Romania underwent a transition period of over 25 years that imposed a structural reform of all systems – from the political one, to the social and cultural ones. The strongest impact was on the economy and the painful reforms affecting the main systems with direct impact on economic growth and social development: industry, education, health and culture. Transition meant the cumbersome shift to free market economy, translated during the first transition period of the nineties into massive downsizing of activities in industrial sectors, even dismembering of some large industrial complexes and massive layoffs of skilled and high-skilled personnel suddenly faced with the need of identifying alternative solutions for surviving and ensuring incomes for the household. This need triggered increasingly higher migration for

labour and even employment as low-skilled worker in other more developed European countries, or other regions of the world. Migration from Romania and Bulgaria up to 2007 already represented 6.4% from total population of both countries. However, the migration propensity shown by Romanians was somewhat higher, as from total population the estimates indicate a share of about 7.1% from total population in Romania's case (Kahanec and Zimmerman, 2010; Eurostat statistics).

Even during the Great Recession, the Romanian migration continued at a swift pace even though the employment chances for this migrant wave were considerably diminished. This fact is also revealed by the UN Report 2015 (United Nations International Migration Report, 2015) where it is shown that, nowadays, Romania has over 3.5 million citizens living in another country, and that at European level the country takes the fourth position after Great Britain (4.9 million emigrants), Poland (4,4 million) and Germany (4 million). Still, the most worrying fact is that Romania has the second increase rate regarding emigration by a yearly average increase rate of 7.3% after Syria! (average yearly increase by 13.1% of the emigration rate in this conflict affected country) and before Poland (5,1%), and India (4.5%) (UN Report, 2015). However, already at the beginnings of Romanian migration some characteristics became noticeable: the main migration directions were towards Mediterranean countries, and Western Europe. The largest Romanian Diasporas are found in Spain and Italy. For instance, for 2014, in Spain were estimated about 950000 Romanians, representing approximately 16% from total immigrants to Spain (Adevarul, April 2015). This figure expressed also a decrease by 8.6% against the preceding year. In Italy, the number of Romanians is in absolute values of 1151395 on 1 January 2016 as this is the country with the largest Romanian Diaspora on the European continent, and the weight of Romanian citizens is of 22.9% in total immigrants to Italy (Dossier Statistico Immigrazione, 2016). Romanians from Italy develop the majority of their activities in constructions 64.4%, trade 11.8% and 4.7% in business services. In Germany, the share of Romanians is 1% in total immigrants, yet the most remarkable phenomenon is noticed for the years 2014 and 2015. If in 2014 to the Romanians already in Germany were added another 75.132 thousand Romanian citizens and Romania was on the first position with respect to the number of immigrants, in 2015 the number of Romanian immigrants added was of yet another 92.346 thousand new immigrants and clearly on increase; however, in this year (2015) Romania ranked second, as the 'Syria effect' made its impact felt (Zuwanderungsmonitor 2015, and 2016). Also in Great Britain the number of Romanian immigrants began increasing already in 2013, before the elimination of labour market restrictions on 1 January 2014, and the number of immigrants from Romania increased significantly after this date. Thus, the estimates for the time interval April-June 2015 indicated an increase by 30% against the comparable period of 2014 and a total of 178 thousand Romanians and Bulgarians active on the UK labour market. Another caveat is necessary, as the period of their effective entry into Great Britain is uncertain (gov.uk. archived content). The common factors determining the migration for labour to these areas of Europe can be identified at the institutional level, in the field of better and functional labour market reforms that increased possibilities of access to the labour market, higher flexibility, and more opportunities for future personal and career development. For Italy and Spain, next to formal institutional conditions and characteristics, also informal institutions contributed due the common language and historical heritage based on certain of a somewhat shared history and national 'Latin' characteristics. These institutional arrangement elements are even stronger in the case of the young generation increasingly more attracted by the migration for education – in fact, a first step perceived as guaranteeing opportunities of flexible and

predictable employment, career and personal fulfilment, by contrast to the main indicators of institutional performance and good governance between Romania and other member-states of the EU.

3. Migration for education – main institutional framework issues

If the first migration waves from Romania were due to transition and the desire to ensure better income and living standards abroad even at the cost of performing low-skilled activities under the actual level, or an expression of high-skilled migration that was lacking opportunities for developing professional activities at the expected level of the often high- and edge-skills, nowadays, the most concerning phenomenon is the one of youths opting increasingly more for continuing/finalising their higher education or training abroad. Some of the last estimates indicate that almost 70.000 Romanian planned in the period 2015-2016 to identify license/master/doctor studies opportunities abroad (Ziarul Financiar, September, 2016). The options were biased – contrary to the options of those migrating for labour – preponderantly towards Great Britain, Denmark, and the Netherlands, but without restriction to these options only. Moreover, yearly according to the group in charge of organizing the Romanian International University Fair, over 6000 young individuals identify such options. At these Fair participate 100 universities yearly; however, Romanian universities are underrepresented as only 10% participate to the fair. These estimates from the period 2014-2016 show that, in general, it might be considered an estimated growth of the yearly rate of young individuals interested in studying abroad of about 6%, while to the above-mentioned preferred destinations are added France, Germany and the United States. From among these options, the most issues are posed by the relations to Great Britain – if before Brexit – Romanian young individuals could access governmental loans as European citizens, the new legislation of UK in this respect is still in need of clarification. The system of governmental loans or low schooling taxes exists also in the Netherlands, Denmark, Sweden, Finland, France and Germany.

A survey realised in 2014, by the League of Romanian Students Abroad on a sample of 1074 respondents, draws attention to the essential motivations. The Survey as well as other of its details and findings, along with the research method and instrument, is available online. The main motivations are: the educational offer associated with technical endowments and teaching staff performances, along with the prestige of the universities in the EU and the world. This order is also according to the survey mentioned-above – an approximately good indicator regarding options after studies' conclusion. It highlights a concern-raising trend about the intention of not returning to the country, the reasons called upon being related to access on the labour market, opportunities of opening businesses, and opportunities of social nature, such as obtaining/purchasing a house and setting up a family, small and white collar corruption, etc. Wages have also an important role regarding options, but they come second when compared with the opportunities provided based on attractiveness degree of the job/position.

2.1 Necessity of strengthening the main institutions and arrangements on the labour market

The platform provided by this survey is the more useful in the current context when it is pursued to (re)consolidate the institutions on the labour market with direct impact on the

minimum guaranteed wage, on full employment according to professional/vocational training and other targets having as final objective the sustainable economic growth of Romania up to the time horizon 2030. The initiatives should consider that for young individuals to return to the country after studying abroad, labour market institutions should provide answers regarding: access on labour market, in direct correlation with diplomas acknowledgement/recognition, and ensuring increased opportunities for continuing training, internship, fellowship and traineeship programmes, thus creating the framework for better professional continuity and predictability. One of the most important issues would be simplifying procedures for diploma recognition and creating and managing improvement programmes of the above mentioned types. Just entering into the labour market does not mean – from the perspective of these young individuals – the guarantee of career predictability and development according to the gained level of education, training and improvement. In this respect, it would be necessary to formulate some policies and measures that would assure career predictability, but under conditions adjusted to the evolutions on the labour market imposed by the current stage of development and transition to the digitalised knowledge-economy. This career predictability, in turn, needs to be associated to some measures providing also predictable evolution of incomes according to progresses and career advancement, so as to be an incentive not only for professing in the country of origin but for continuing the activity in the country for the entire active life. Creating some increased opportunities for opening businesses by young entrepreneurs and putting to good use their innovative potential by removing as much as possible bureaucratic hindrances, along with some measures/solutions for ensuring business mentorship for these young individuals is also regarded as recommendable. Active labour market policies, for those failing to identify a job should be diversified and intensified as to meet the new flexibility conditions, and the new emerging contractual forms which took shape in the changed context triggered on one hand by the Great Recession and, on the other hand, by the transition to the digitalised society which changes not only the structure of industry and occupations, but also requires new institutional arrangements in the economy, in particular for labour market and the education system.

3. CONCLUSIONS

Beyond the common approach, at EU level continues the drafting of policies for managing migration at each member-state's level. This state of affairs reflects the existing institutional changes and dynamics at national level regarding labour market and education, and the majority give at least indications about preferences with respect to immigrants from other countries of the world. Nevertheless, with respect to the countries of origin, the majority of the specialised studies show that in the case of migration the possible positive outcomes in the country of origin in the labour market, on wage increases, or decent working conditions for all categories of employees do not necessarily assure a diminishment of individual migration preferences, but might contribute to reducing emigration flows and to 'demographic reset' for countries most affected by migration during the last ten to twenty years. Circular migration could also be one solution (Zimmermann, 2014).

Formal institutions at EU and national level must identify concrete forms for ensuring common governance and management of the phenomenon at EU- and country level. Nevertheless, the situation is different in the case of informal institutions generated by the migrants as these tend to give the shape and direction of future migration waves to certain countries, and areas in the EU and the world. Such informal institutions are created also on the

worldwide web where by networking and socialising the young generation influences and contributes, for instance, to the constant increase in the numbers of young Romanian students leaving abroad. In this context, migration in Romania is one of the essential issues that must find answers, because it is necessary to manage the national migration potential, while at the same time preparing and adjusting to the gradual change of Romania into a country of immigration from a country of emigration due to its accession to the EU and to the evolution of the national economy which will impose, finally, due to demographic change, attracting labour force from other regions of the world. The Romanian and European conundrum must, from this perspective find solutions based on targeted, managed, monitored and measurable intervention on the labour market and social services' institutions, as well as on the ones of the educational system. Only thereby possible initiatives for a common international and/or European governance of the migration phenomena might be achieved (Betts, A. 2010).

References

Arpaia, A., and Mourre, G. "*Institutions and performance in European Labour Markets: taking a fresh look at evidence*" in *Journal of Economic Surveys* 26 (1): 1–41. 2012

Baas, T., et al. "*Labor Mobility in the Enlarged EU: Who Wins, Who Loses?*" In *EU Labor Markets After Post-Enlargement Migration*, edited by Martin Kahanec and Klaus F. Zimmermann, 47–70. Berlin, Heidelberg: Springer Berlin Heidelberg 2009

Bertocchi, G., and Strozzi,C., "*International Migration and the Role of Institutions*." *Public Choice* 137, no. 1–2 (October 2008): 81–102, 2008

Betts, A., (ed.) *Global Migration Governance*. Oxford: Oxford University Press, 2010

Centro Studi e Ricerche Immigrazione Dossier Statistico http://www.dossierimmigrazione.it

Freeman, Richard B, London School of Economics and Political Science, and Centre for Economic Performance *Labor Market Institutions around the World*, 2008

Ghica,S., *Cele mai mari comunitati de romani din Spania*, Ziarul Adevarul, 18 April 2015

Kahanec, M., Zimmermann, K. F., (**eds**.) *EU Labor Markets After Post-Enlargement Migration*. Berlin, Heidelberg: Springer Berlin Heidelberg, 2010

Liga studentilor romani din strainatate, *Studiile in strainatate si intoarcerea acasa. Prezentarea si analiza rezultatlor, 2014*, https://www.lsrs.ro/tag/sondaj/

Newland, Kathleen "Circular Migration and Human Development." 2009 https://mpra.ub.uni-muenchen.de/19225/.

North, Douglass C., *Institutions, Institutional Change, and Economic Performance*. The Political Economy of Institutions and Decisions. Cambridge ; New York: Cambridge University Press, 1990.

Pascari, M. *Aproape 70000 de tineri vor sa plece la studii in strainatate. Cele mai cautate destinatii sut Marea Britanie, Olanda sau Danemarca*, Ziarul Financiar, 15 September 2016

Sobotka, T. "*Migration continent Europe*" Vienna Yearbook of Population Research 2009, 2010: 217–33.

United Nations, Department of Economic and Social Affairs, Population Division *International Migration Report 2015*, 2016

UK Government Web Archive – The National Archives 2017 [archived content]

Zimmermann, K. "*Circular Migration – Why restricting labor mobility can be counterproductive*, *IZA World of Labor*, 2014

Zuwanderungsmonitor 2015, 2016, http://doku.iab.de/arbeitsmarktdaten

ROMANIAN INFRASTRUCTURE: ROAD TO EUROPEAN INTEGRATION

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Abstract

This paper's objective is to comprise on the map of Romania in its European context some of the main alarm signals regarding the current context that the country is facing, after a decade of EU membership. The starting point of the mapping process is the road infrastructure, as one the main connecting means from all points of view: physical, social, economical. The road infrastructure in Romania is literally generating distances (instead of reducing gaps) between this country and other European countries and among various economic and social national communities.

The present paper analyses the determining influence of existent Romanian road infrastructure on the country's economic growth, on the access to community resources such as education and medical services, on human health and well-being. Conducted research and resulting correlations also pin-point Romania within the European Union's Member States and show to which extent some of the strategic development goals set out by the EU could be achieved within the timeframes set.

Keywords: *road infrastructure, economic growth, resources, well-being*

Classification JEL: *O18, O52, R4*

Previous studies have already underlined the importance of infrastructure on national economic growth, emphasizing direct correlations between quality infrastructure and foreign direct investments, growth of the GDP or increased national and international business opportunities and trade flows (Banerjee, Duflo, & Qian, 2012; Ismail & Mahyideen, 2015; Ivanová & Masárová, 2013; Palei, 2015).

Many studies have demonstrated the positive effect of infrastructure on productivity and growth rates in the long term. Infrastructure investments are complementary to other investments, such as if they are insufficient then they can compel other investments hindering economic growth (Newbery, 2012). However, it is important to invest wisely in infrastructure because over-investment can lead to projects that are inefficiently large, and they could have low marginal returns (Aschauer, 1989).

Since better quantity and quality of infrastructure is important for economic growth, it has direct impact on the productivity of human and physical capital (e.g. by providing access, roads can improve jobs, facilitate private investment, and raise income levels) (Estache & Garsous, 2012). Moreover, developed infrastructure provides access for the population to various services, such as education, health facilities (Agénor, 2008), leisure and recreational locations etc, thus improving the quality of life.

However, in Romania's case, road infrastructure has developed insignificantly during the past decades, while the expenditure on this process has become one of the highest in Europe. According to the National Institute of Statistics, in 20 years, from 1995 to 2005, the number of highway kilometres in Romania has increased from 113 in 1995, to only 747 in 2015, while the total area of the country comprises almost 240000 km^2 (National Institute of Statistics, 2017); there are other EU Member States which account fewer highway kilometres in absolute figures, such as Cyprus, Bulgaria or Estonia, but in terms of relative figures compared to the country dimension, they rank better than Romania.

The paper provides a thorough analysis of the evolution of road infrastructure in Romania over the past decades, before and after becoming a Member State of the European Union, thus determining the costs and the benefits of investments in infrastructure projects in terms of national growth and population's access to resources and public services. Mapping the weaknesses of our country and assessing them in European context grants in-depth necessities for further action in order to diminish the infrastructure gap between Romania and Central-Western EU countries.

REFERENCES

Agénor, P.-R. (2008). Health and infrastructure in a model of endogenous growth. *Journal of Macroeconomics*, *30*(4), 1407–1422. https://doi.org/10.1016/j.jmacro.2008.04.003

Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, *23*(2), 177–200. https://doi.org/10.1016/0304-3932(89)90047-0

Banerjee, A., Duflo, E., & Qian, N. (2012). *On the Road: Access to Transportation Infrastructure and Economic Growth in China* (NBER Working Papers Series No. 17897). Cambridge, MA. https://doi.org/10.3386/w17897

Estache, A., & Garsous, G. (2012). The impact of infrastructure on growth in developing countries. *IFC Economics Notes*, *Note 1*(April 2012), 1–11. Retrieved from http://www.ifc.org/wps/wcm/connect/054be8804db753a6843aa4ab7d7326c0/INR+Note+1+-+The+Impact+of+Infrastructure+on+Growth.pdf?MOD=AJPERES

Ismail, W. N., & Mahyideen, J. M. (2015). *The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia* (ADBI Working Paper Series No. 553). Tokyo. Retrieved from https://www.adb.org/sites/default/files/publication/177093/adbi-wp553.pdf

Ivanová, E., & Masárová, J. (2013). Importance of Road Infrastructure in the Economic Development and Competitiveness. *ECONOMICS AND MANAGEMENT*, *18*(2), 263–274. https://doi.org/10.5755/j01.em.18.2.4253

National Institute of Statistics. (2017). Tempo online time series. Retrieved 22 March 2017, from http://statistici.insse.ro/shop/

Newbery, D. (2012). *Energy and infrastructure. Submission to the LSE Growth Commission*. London: Institute for Government. Retrieved from http://www.lse.ac.uk/researchAndExpertise/units/growthCommission/documents/pdf/contributions/lseGC_newbery_energy.pdf

Palei, T. (2015). Assessing the Impact of Infrastructure on Economic Growth and Global Competitiveness. *Procedia Economics and Finance*, *23*, 168–175. https://doi.org/10.1016/S2212-5671(15)00322-6

TRANSITION TO DIGITAL SOCIETY, TRANSACTION COSTS AND THEIR IMPACT ON SOCIOECONOMIC METABOLISM

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Abstract
Two key issues that shape the economic development and growth of a country are the independence and effectiveness of the judicial system and the level of bureaucracy. Increasing the independence and effectiveness of the judicial system reduces corruption and protects private property and economic freedom, while reducing bureaucracy is absolutely necessary to increase a country's competitiveness by lowering the cost and increasing the speed of transactions. This paper introduces the transaction costs approach and discusses its connection to the concept of socioeconomic metabolism. Based on the MuSIASEM (Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism) approach the paper inquires how the 'socioeconomic/societal metabolism' could be impacted in a digital economy by various types of transaction costs.

Keywords: socioeconomic metabolism, socioeconomy, digital economy, transaction costs, MUSIASEM.

Classification JEL: B52, O10, Q57

1. INTRODUCTION

More than forty-five years ago, in his book *The Entropy Law and the Economic Process*, Nicholas Georgescu-Roegen (1971) introduced the idea of a 'minimal' bioeconomic program as absolutely necessary for the long-term harmonious survival of humans on Earth. In his view, economic systems are considered as viable entities (socioeconomies) with an exosomatic metabolism[i]. The social/societal metabolism is molded, in time, by the changing institutional/cultural matrix and can be analyzed using the Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) approach based on Georgescu-Roegen's flow-fund model.

2. IS THERE A DIGITAL WORLD CONNECTION BETWEEN THE SOCIOECONOMIC METABOLISM AND TRANSACTION COSTS?

In 1995, Herman Daly detailed some of the conceptual changes that would be required in the study of economics under this new worldview. The most fundamental

change would be represented by the opening of the 'circular flow diagram'. Achieving sustainability in development inextricably imposes that the economic process be represented as an open diagram of the socioeconomy containing the continuum 'economy embedded in the environment' (antropo-eco-system in Figure 1) with the implicit reciprocal interactions (read one-way flows of humans and other living beings and circular, diminishing, flows through consumption and recycling of materials and energy). Very slowly (it took decades), but pressed by the approaching environmental crisis, more and more scholars adopted this point of view.
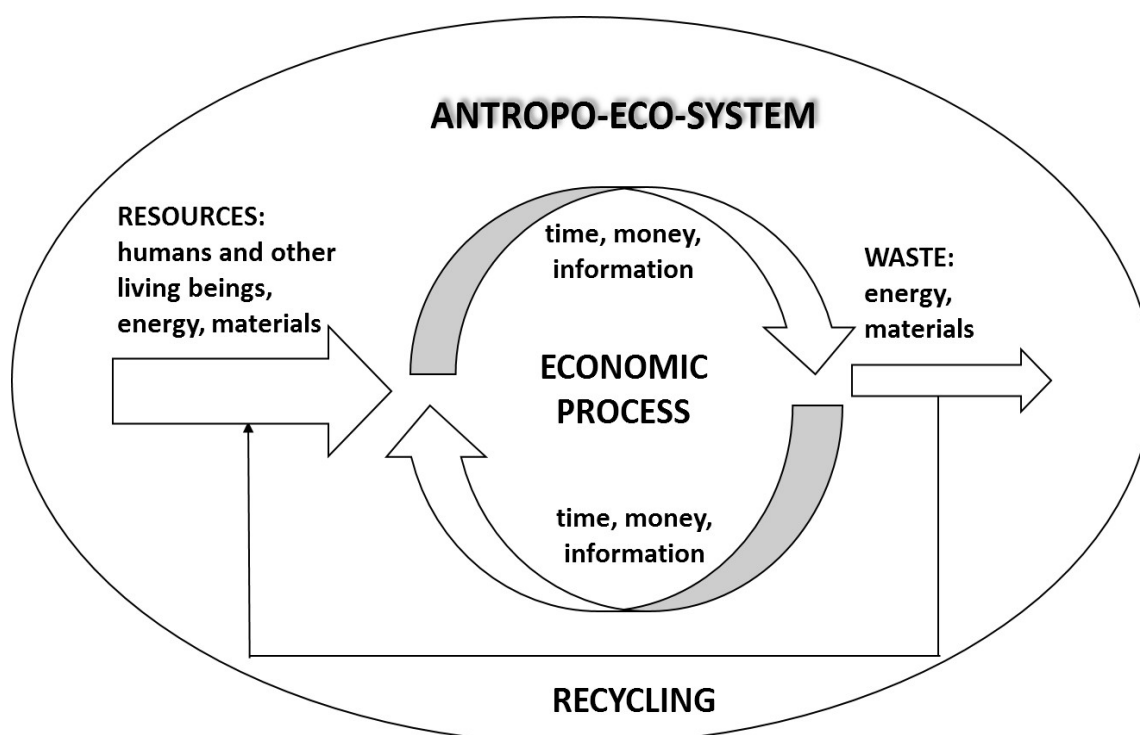
Source: Authors' adaptation after Giampietro, M., Mayumi, K., Sorman, A. H. (2013), Fig. 6.3, p. 149

FIGURE 1 *Simple sketch of the socioeconomy*

From the institutional/cultural point of view, Douglass C. North (2005, p. 158) argues that a functional society (sustainable/durable) would be based on four elements: (i) the institutional matrix as a set of organizations together with a set of rights and privileges; (ii) in both political and economic markets, exchange relationships have a stable structure; (iii) the set of political rules and enforcement protects organizations and exchange relationships; and (iv) some mixture of norm internalization and coercive enforcement that induces conformity. In this worldview, the transaction costs are defined as "the costs of measuring what is being exchanged and of enforcing agreements".

Under this framework, two key issues that shape the sustainable development of a country (even more with the advent of the digital age) are the levels of production and transaction costs which are intrinsically interconnected with innovation intensity, independence and effectiveness of the judicial system, and the level of bureaucracy.

Increasing the independence and effectiveness of the judicial system reduces corruption (made easier by e-communication) and protects private property and economic freedom, while reducing bureaucracy is absolutely necessary to increase a country's competitiveness by lowering the cost (for all four components listed above) and increasing the speed of transactions.

One vital question is related to the sustainability of the digital society as expanding e-connectivity brings with it exposure on a scale ever greater to turbulence when the individual/company is facing a persistent shut-down or lack of energy. Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) was devised to 'explore tradeoffs and synergies between different development goals (across disciplines and scales) and to check the semantic of the narratives associated with the choice of these indicators with the relevant social actors' (Scheidel et al. 2010, p.10). The concept of socioeconomic systems as metabolic systems prompted Georgescu-Roegen to envision the 'flow-fund' model of the production process, where the 'funds' are elements whose identity remains unchanged during the economic process (they define the system in the model) and 'flows' that are produced or consumed during the economic process (they define the interactions of the system in the model). Flows are, among other, money, energy and materials flows; in a digitally organized world, it is mandatory to consider information flows also.
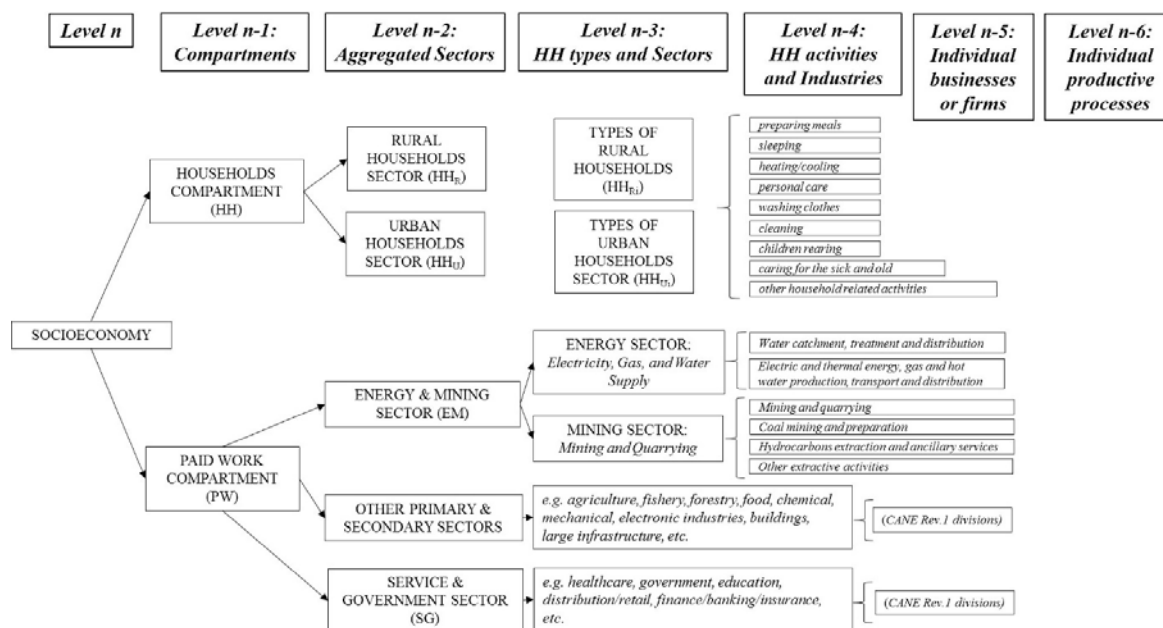
FIGURE 2 *Levels 1 to 7 in the MuSIASEM socioeconomic approach*

A possible split by MuSIASEM levels down to the level of individual households, respectively businesses or firms and their associated individual activities or processes is presented in Figure 1. If for the aggregated levels *n* (whole economy), *n-1* (compartments) and *n-2* (aggregated sectors), the intensive MuSIASEM variables do depend on the level of transaction costs (as explained in Table 1), it should be emphasized that for *level n-3* and

below, the intensive MuSIASEM variables might or might not be influenced by transaction costs depending on their specificities.

Table 1 *MuSIASEM Intensive Variables level n to level n-2*

Intensive Variable	Name	Explanation	Influenced by transaction costs YES/NO
EMR_{SA}	Exosomatic Metabolic Rate Societal Average	Energy consumed at the level of the whole society	YES
EMR_{HH}, EMR_{PW} (EMR_{EM}, EMR_{PS}, EMR_{SG})	Exosomatic Metabolic Rate for Compartments (Aggregated Sectors): households and paid work (energy and mining, other primary and secondary sectors, service and government)	Energy consumed per hour of activity at the level of each compartment or aggregate sector	YES
ELP_{SA}	Economic Labor Productivity Societal Average	Value-added per hour at the level of the whole society	YES
ELP_{PW} (ELP_{EM}, ELP_{PS}, ELP_{SG})	Economic Labor Productivity for Compartments (Aggregated Sectors): households and paid work (energy and mining, other primary and secondary sectors, service and government)	Value-added produced per hour of activity at the level of each compartment or aggregate sector	YES
EI_{SA}	Energy Intensity Societal Average	Energy consumed per unit of value-added produced at the level of the whole society	YES
EI_{PW} (EI_{EM}, EI_{PS}, EI_{SG})	Energy Intensity for Compartments (Aggregated Sectors): households and paid work (energy and mining, other primary and secondary sectors, service and government)	Energy consumed per unit of value-added produced at the level of each compartment or aggregate sector	YES
EE_{SA}	Energy Efficiency Societal Average	Measures economic productivity in energetic terms at the level of the whole society	YES
EE_{PW} (EE_{EM}, EE_{PS}, EE_{SG})	Energy Efficiency for Compartments (Aggregated Sectors): households and paid work (energy and mining, other primary and secondary sectors, service and government)	Measures economic productivity in energetic terms at the level of each compartment or aggregate sector	YES

Source: Adaptation of table in Albu et al. (2009), p. 6-7

In the MuSIASEM methodology, the intensive variables (Table 1) for the aggregated levels (whole economy, compartments and sectors), depend on the level of transaction costs. For example, if a person lives in a country with a nondigital and excessive paperwork system where in order to obtain the proof of existence for a piece of private property to be either inherited or purchased means, initially, to spend hours waiting in line at various government-related offices in different parts of a city only to submit a written request, and then to wait for days or weeks more to get the official answer. There also might be the alternative, in order to save some time, to pay a bribe to an 'intermediary' and get faster the information/document through corrupt functionaries. In both cases, resources (human energy, time and money) have to be wasted in this process: the person needs to take free time from work (in which case his/her productivity drops) and accept a wage reduction or use some vacation days (in which case other sectors of the

economy might be impacted). Additionally, in such an economic system, it is possible that private property is not accurately protected by law. For example, if a person that hosts another person asks the guest to leave the property and the guest refuses, and the only alternative (by law) for the host is to go to court and ask for a judge to give an order so the police can evict the guest, this is again a case of waste of resources (human energy, time and money). These very simplistic examples explain how the change of the individual time-use pattern caused by various transaction costs alters both the endosomatic metabolism of the person considered (private person, business owner or employee) due to the need for additional human energy, and the exosomatic metabolism of the particular industries (segments of the economy) impacted, meaning the socioeconomic metabolism.

Furthermore, the emergence of the digital society and its corresponding institutional matrix brings 'new clothes' to poverty. Given that "what characterizes an economic system are its institutions and not the technology used" (Georgescu-Roegen 1976, p. 105), qualitative change is particularly important in building a sustainable society. The last century brought an unprecedented development of science and technology and a new name for our time, the digital age, and scholars of economic development increasingly recognized that understanding the role of institutions is crucial in understanding economic change. Human societies and Earth ecosystems cannot survive (and implicitly maintain their metabolisms) in the absence of air, water, food and energy and the study of the energy-water-food nexus is essential for the durability of a digital society faced with a lasting shut-down/lack of energy. For example, US decision-makers are already considering the case of a giant solar flare hitting Earth and how it could pull down the entire electric grid. In this regard, quite recently (Oct. 29, 2015) the White House released the National Strategy for Space Meteorology (Harthorn, 2015). Among other international bodies, the International Renewable Energy Agency (IRENA) recognizes the MuSIASEM model as one of the eight tools for studying the water-food-energy nexus.

3. CONCLUSIONS

This paper introduces the conceptual area of 'socioeconomic/societal metabolism'. It discusses how, given the structure of levels, compartments and sectors in the Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) approach, the macro-level exosomatic metabolism could be impacted by various types of transaction costs in a digital economy. Comparative case studies of socioeconomies more or less functional could provide a multitude of additional examples and insights into how digital economy transaction costs impact the exosomatic metabolism at any level and open a new line of research since designing a strategy for sustainable development should necessarily assess that impact under different scenarios.

ACKNOWLEDGEMENT

[i] *In the MuSIASEM model, based on Nicholas Georgescu-Roegen's approach, the flow of exosomatic energy represents in a sketchy way the use of energy by humans outside of their body (in the socioeconomy) and which corresponds to the exosomatic metabolism, differently from the flow of endosomatic energy which corresponds to the endosomatic metabolism associated with the processing of energy and matter inside the human body.*

REFERENCES

Albu, L. L., Iorgulescu, R. I., Stanica, C., Giampietro, M., Sorman, A., and Serrano, T. FP7-SSH-2007-1 SMILE, *Report of the Romanian case study*, Deliverable 9, WP 3. 2009. http://www.smile-fp7.eu/deliverables/SMILE%20D9%20Romanian%20case%20study%20report.pdf

Daly, H. E. *On Nicholas Georgescu-Roegen's contributions to Economics: an obituary essay*, Ecological Economics, 13, pag. 149-154. 1995

Georgescu-Roegen, N. *The Entropy Law and the Economic Process*. Harvard University Press, Cambridge U. Press, Cambridge, MA. 1971.

Georgescu-Roegen, N. *Energy and economic myths. Institutional and analytical economic essays*. New York: Pergamon Press. 1976.

Giampietro, M., Mayumi, K., and Sorman, A. H. *Energy analysis for a sustainable future: multi-scale integrated analysis of societal and ecosystem metabolism.* Routledge, Oxford, UK. 2013.

Harthorne, M. *White House Preparing for Catastrophic Solar Flares*, Newser, Oct 30. 2015. Available online http://www.newser.com/story/215329/white-house-preparing-for-catastrophic-solar-flares.html (Accessed Nov. 2, 2015).

IRENA. *Renewable Energy in the Water, Energy & Food Nexus*. 2015. Aavailable at http://www.irena.org/DocumentDownloads/Publications/IRENA_Water_Energy_Food_Nexus_2015.pdf (Accessed Nov. 2, 2015)

North, D.C. (2005). *Understanding the process of institutional change*. Princeton University Press, Princeton, NJ. 2005.

Scheidel, A., Giampietro, M. and Serrano, T. SMILE Deliverable 26, WP 4 *Report on trade-offs in relation to the goal of poverty reduction and environmental protection in developing countries*. 2010.

THE EU-CHINA COOPERATION TO PROMOTE SUSTAINABLE DEVELOPMENT

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Abstract
In the past 37 years, we witnessed a spectacular economic development of the People's Republic of China, which experienced an average annual growth of 9.96%. Unfortunately, in order to maintain this rate of growth, the Chinese government did not observe the environmental protection laws, thus causing pollution and environmental degradation. Nevertheless, in recent years, China became aware that it is one of the biggest polluters in the world and that it should choose the path of sustainable economic growth and green development. To foster sustainable development, cooperation at a global scale is indispensable. To this effect, EU, the main importer of Chinese goods, is directly interested in seeing environmental issues in this country mitigated and in having a close and efficient cooperation with China to find solutions for preventing and fighting the problemsassociated with sustainable development.

This paper undertakes to analyse the cooperation relationship between the EU and China in the field of sustainable development, focusing on the environmental issues and on climate change, as well as on the way in which the EU-China bilateral relations can influence the fostering of sustainable development on a global scale. In this study, I used qualitative research methods, namely document analysis. Data collection was conducted by examining several types of documents: specialised articles, communications of the European Commission, reports of the Council of the European Union, statistics and books.

Keywords: sustainable development, EU-China cooperation, climate change, environment

Classification JEL: Q01, Q54, Q56

1. Introduction

The EU and China established official diplomatic relations in 1975, under the Trade and Economic Cooperation Agreement signed in 1985. These relations intensified rapidly, being characterised by interdependence, and, in 2003, the two entities became strategic partners. "In order to reflect the full breadth and depth of today's comprehensive strategic partnership between the EU and China, the two sides agreed to launch negotiations on a new

Partnership and Co-operation Agreement which will encompass the full scope of their bilateral relationship, including enhanced cooperation in political matters." (Council of the European Union, 2006). Unfortunately, these negotiations have yet to be completed.

The rapid evolution of the ties between the two players "has been driven by the rise of China as an economic and geopolitical power, the advancement of the European market integration, their shared trade interests and search for common solutions to global economic, security and technological challenges" (Primova and Van Vrede, 2012).

In order to find pertinent solution to these challenges, the two entities agreed to further intensify their bilateral relations by extending their scope so as to cover an ever-increasing number of fields. To this effect, the two players seek to deepen their ties by means of a periodic political dialogue especially with regard to: trade in goods and services and the access to markets, climate change and energy, environmental protection and sustainable development, cooperation in research, development and innovation etc.

It is worth mentioning that trade relations are the "driving force" of the EU-China bilateral relationship and, at the same time, the cornerstone for building cooperation relations in other strategic fields. In this context, the European and Chinese political leaders who attended the Helsinki Summit (2006) underlined the fact that „sustainable development was one of the main pillars of the strategic partnership. Furthermore, the two entities agreed to build a sustainable society that was friendly to the natural resources available on a global scale and to the environment". The objective of this study is to give a complex and coherent overview of the EU-China cooperation relations on sustainable development. To reach that objective, the paper is structured as follows: Section 1 – Introduction; Section 2 – China, the world's biggest polluter –, where we will review the main topics regarding environment degradation caused by China's actions; Section 3 – The EU-China cooperation relations on sustainable development –, where we will analyse the main aspects of the European-Chinese ties in the field of sustainable development; Section 4 – Conclusions.

2. China, the world's biggest polluter

In the past decades, China asserted itself as a major economic and commercial power on a global scale. It is currently the second biggest power in the world, the largest producer of goods, the largest exporter and the second largest importer. According to statistical data, in the past 37 years, China's average growth rate was approx. 10%. Yet there are researchers who claim that this growth was somewhat artificial, because it was accomplished to the detriment of the country's environment. Nevertheless, according to Justin (2012), China is facing four great challenges: "the increase of inequality, the increase of the level of environmental degradation, the persistent external imbalances, as well as an ageing society." Another serious problem for China is "the increase of energy insecurity, which may become an Achilles' heel for development" (Alexandru, 2014).

As far as environmental degradation is concerned, this has become a top priority problem for China, determining it to wish to become "an environmentally friendly society and to promote a green environment by using resources efficiently" (Hanson, 2011). Nevertheless,

"China continues to favour economic growth at the expense of its own environment"(Szunomár, 2011). According to CSM (2008), "if the Chinese economy continues to grow at the current rate and the Asian giant does not decrease its energy consumption rate, then, by 2030, this country will be emitting as much carbon dioxide into the atmosphere as the entire planet". Moreover, as the chart below shows, carbon dioxide emissions from the burning of fuels almost tripled, being the main cause for the emergence of climate changes.

Chart no.1 Carbon dioxide emissions of the world's main powers (million tonnes of CO$_2$)

	EU	People's Rep. of China	Japan	US
2000	3,787	3,086	1,141	5,643
2005	3,920	5,358	1,178	5,702
2010	3,612	7,707	1,112	5,347
2013	3,348	8,980	1,230	5,103
2014	3,160	9,087	1,189	5,176
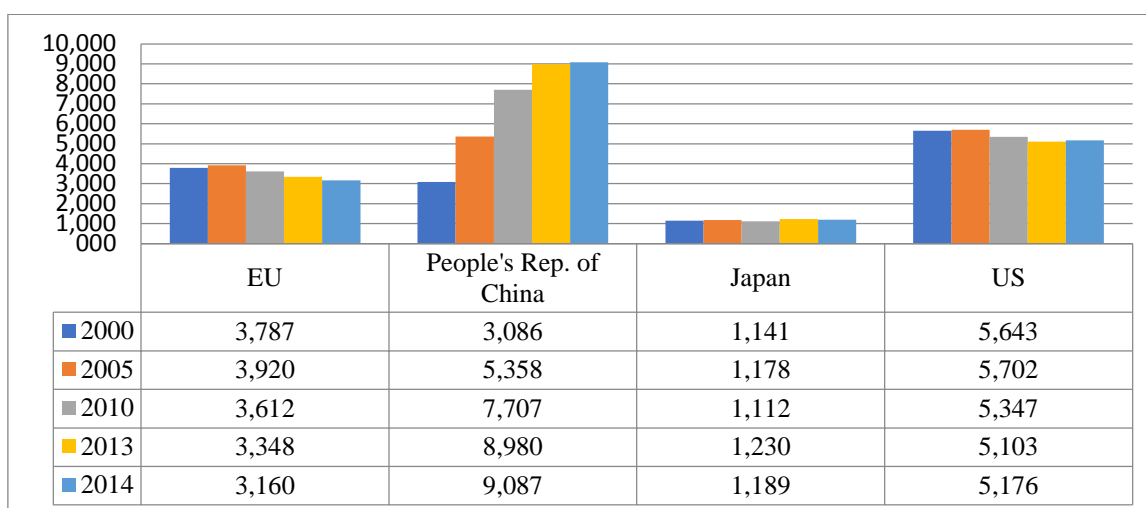
Source: made by authors based on data from International Energy Agency

In addition, according to the World Bank, the majority of the most polluted cities in the world are in China, with "a level of pollution that is twice or even three times higher than that of European capitals. This is due to industrialisation, high population density and the large and growing number of cars" (Szunomár, 2011). However, China is surpassed by the US and by Japan in the list of countries by carbon dioxide emissions per capita (see Chart no. 2).

Chart no.2 Carbon dioxide emissions per capita (tonnes CO 2 / capita)
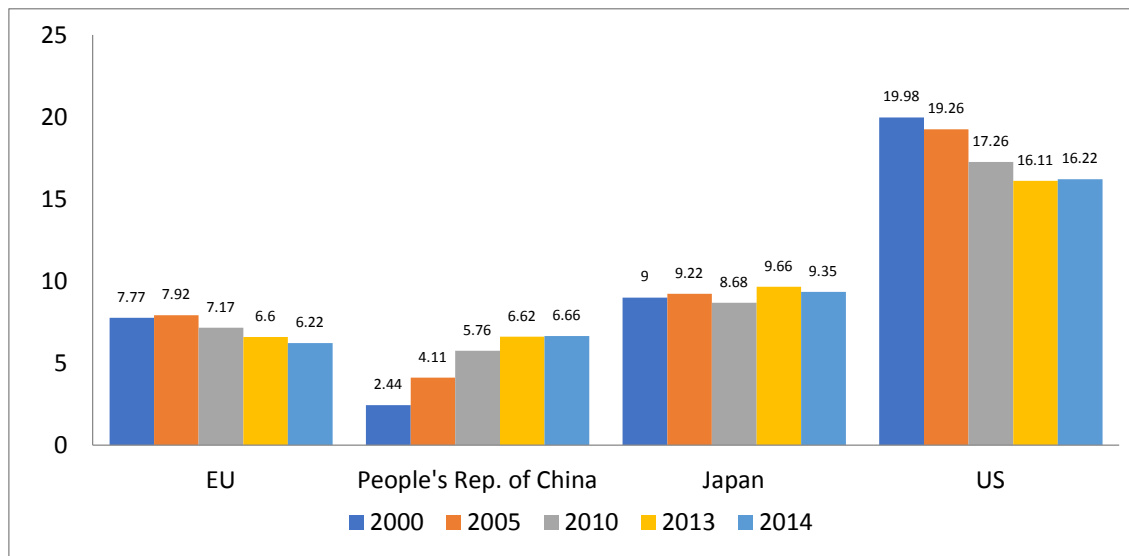
Source: made by authors based on data from International Energy Agency

It is important to note that the People's Republic of China became aware that it promoted an economic growth that violated the environmental laws and it decided to take the path of sustainable development. Furthermore, "the European Union recognised that China would play a central role in addressing the challenge of sustainable development. The EU and China should work together closely and efficiently on matters of energy, environment and climate change, underlining the fact that the response to climate changes is the main task towards achieving sustainable development on a global scale, both for today and for the generations to come" (Szunomár, 2011). In addition, several researchers, including Hanson (2011), claim that "achieving a sustainable development, both by China and by the entire Europe, depends on the cooperation between the latter and the Asian giant towards meeting the environment objectives". With that in mind, let us analyse, in the next section, the Sino-European cooperation relations in the field of sustainable development.

3. The EU-China cooperation relations in the field of sustainable development.

Considering the fact that the new millennium is characterised by serious problems that affect the entire world, ensuring a sustainable development is paramount. China plays a major role in achieving this objective. In order to find solutions that work, China needs to cooperate with other countries that have the necessary technology and financial means, and are open to such cooperation. In view of these criteria, China could only cooperate with the US, the EU and Japan.

While the US and Japan are more reluctant towards technology transfer, fearing the modernisation of China's military forces, the EU is open to such a cooperation. Furthermore, the European and Chinese political leaders decided to work together in order to fulfil the goals

of the 2030 Agenda for Sustainable Development. These goals include "to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations" (The United Nations).

Moreover, the EU reached the conclusion that the People's Republic of China should not be held exclusively responsible for environmental degradation, since China is "the world's workshop", which favours the export of pollution from all the other countries to China.

As mentioned above, the official diplomatic relations, which began in 1975, relied on trade. These relations gradually evolved and, in 2003, turned into a Strategic Partnership that concerned several fields of cooperation. According to De Matteis (2010), "since 2005, issues related to the environment and climate change have been at the very heart of their bilateral relationship, and consistently on the agenda of their bilateral summits". This was also highlighted by the European Commission in 2006: "One of key global challenges is to ensure our development is sustainable. China will be central to meeting this challenge. On issues such as energy, the environment and climate change, respect for international social standards, development assistance, as well as wider macroeconomic issues, the EU and China should ensure close international co-operation" (The European Commission, 2006). The importance of the cooperation between the two players with regard to sustainable development is also highlighted by the fact that this notion is one of the central pillars of the EU-China 2020 Strategic Agenda for Cooperation (ECFR, 2014).

Another top priority for China, as well as for the EU, in achieving sustainable development concerns climate changes. These "tend to include not only environmental, but also other issues, such as development, economic growth, international security and, in certain cases, even social and political stability (De Matteis, 2010).

As far as the reasons for cooperation are concerned, we would like to point out the following: (1) "both the EU and China face similar challenges with regard to energy and the environment; (2) they are both interested in Central Asian resources and share some common energy suppliers" (De Matteis, 2010); (3) "the increasing co-dependency between nations in achieving progress in environmental protection on a global scale; (4) the control of the transport of pollutants from Asia to Europe; (5) creating an environmentally friendly Chinese economy" (Hanson, 2011).

With regard to the institutional framework, the cooperation between the two entities is achieved by means of high-level dialogues. For instance, the cooperation on energy issues began in 1994, through talks between the European Commission and the Chinese Ministry of Science and Technology; the cooperation on environmental issues dates back to the EU-China talks on environment launched in 2003; as for climate change, the two entities decided to launch the EU-China Partnership on Climate in 2005.

To sum up, we may conclude that the issues related to sustainable development are constant topics for debate during the EU-China summits and are essential to deepening the bilateral cooperation relations. Moreover, the further strengthening of these bilateral relations, both in the field of the environment and in the field of climate change, can be greatly beneficial to both players in the international arena. Benefits include an increase of energy

security, which is vital to the sustainable economic growth of the planet, the shaping of a positive identity of the two players in the eyes of the world and the fostering of genuine economic growth for China.

4. Conclusions

Despite the bilateral EU-China relations having had their downs, they remain some of the most emblematic international cooperation relations. The EU became vital to China's development and rise, while China is an increasingly important partner for the EU in all fields.

Considering that the EU is the main consumer of Chinese goods, it is directly interested in cooperating with China on issues related to the environment, on energy and on climate change. In order to achieve a sustainable economic growth on an international level, both the EU and the EU institutions should encourage and support China to become more responsible about environmental protection, energy consumption and climate change.

In this paper, we were able to notice that the security of the sustainable energy supply, climate changes and environmental protection are top priorities both for the EU and for China in their efforts to achieve sustainable economic growth, a sustainable environment and social sustainability. At the same time, these issues are also vital to the development and the deepening of the EU-China cooperation.

With a view to achieving sustainable development, it is recommended to intensify the dialogue and to consolidate the cooperation between the political and public players and the research institutions of the two entities. On the one hand, this would raise awareness on the issues related to climate change and to energy; on the other hand, this would help to find pertinent solutions to fulfilling the goals of sustainable development. Furthermore, it is recommended to disseminate information, to foster sustainable models of production and consumption, and to implement development strategies based on the new technologies.

In view of the points made in this paper, we may claim that, in order to reach the goals of the 2030 Agenda for Sustainable Development, the two players must consolidate their cooperation in this field and must pay more attention to the issues of climate change, energy and environmental degradation.

References

1. Alexandru C., - *Între elefant, urs și dragon. Spre o nouă arhitectură globală*, Editura RAO, București, 2014
2. Council of the European Union - *Ninth EU-China Summit Helsinki 9 September 2006 Joint Statement*, 2006. Available at: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/90951.pdf.
3. The Christian Science Monitor (CSM), - *China's carbon dragon. Growing China's economy while cutting planet-warming emissions is a huge challenge*, 2008. Available at: http://www.csmonitor.com/Commentary/the-monitors-view/2008/0222/p08s01-comv.html.

4. De Matteis, P., - *EU-China Cooperation in the Field of Energy, Environment and Climate Change*, Journal of Contemporary European Research, Vol. 6, Issue 4, pp. 449-477, 2010.
5. EU European Council on Foreign Relation (ECFR) - *Co-operation with China on climate change,* 2014. Available at: http://www.ecfr.eu/scorecard/2014/china/10.
6. European Commission, - *Communication from the Commission to the Council and the European Parliament. EU – China: Closer partners, growing responsibilities*, 2006.
7. Hanson A.J.,-*Trilateral environment and sustainable development*, International Journal, Vol 66, Issue 2, pp.313-331, 2011.
8. International Energy Agency – CO_2 emissions from fuel combustion, 2016.
9. Justin Y.L.,-*The Future of China's Growth*, 2012. Available at: https://www.project-syndicate.org/commentary/the-future-of-china-s-growth.
10. Primova R., Van Vrede J.,- *The Role of Civil Society Dialogue in the EU-China Cooperation on Renewable Energy,* Institute European Studies, Policy Brief, Issue 5, 2012.
11. Szunomár Á., - *EU-China Cooperation in the Field of Sustainable Development: Challenges and Opportunities*, Institute For World Economics of the Hungarian Academy of Sciences, No. 41, 2011.
12. The United Nations - *Transforming our world: the 2030 Agenda for Sustainable Development,*   2015.   Available at: https://sustainabledevelopment.un.org/post2015/transformingourworld.

ANALYSIS OF HUMAN RESOURCES IN AGRICULTURE OF STAVROPOL REGION

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Abstract
The paper includes analysis of demographical parameters, gender and age composition of populations, and employment and unemployment trends in Stavropol Region, one of the big agri-industrial regions of Russia.
The research has shown that people of active working age have the biggest portion in the overall rural population, while share of people in the age of retirement is higher than the one of young people.
Due to the implementation of the Maternity Capital Program (federal program which supports fertility) launched in 2007, number of children below nine increased in rural population.
There is still a disproportion between number of men and women in rural settlements of Stavropol Krai. Prevalence of female population over male population exhibits after the age of 40 and reaches a maximum in the age of 70-79.
Increase on rural population by means of natural population changes shrinks. Natural losses are not recovered by means of migration flows. During the preceding five years, rural population has been losing five thousand people per annum because of migration outflow.
In Stavropol Krai, the major source of migration gain is international migration, primarily from the countries of the former Soviet Union. In rural areas, it is almost two times higher that migration outflow of indigenous inhabitants to other regions of the country. Among incomers, over a half are the people in active working age. This partly compensate losses of indigenous inhabitants in employable age.
Over 50% of rural people in the age above 15 have general and secondary professional education. Only 14.1% of people of similar age group in rural areas have higher education, including incomplete one.
Discovered factors and tendencies will retain their importance in the mid-term and will cause a substantial effect on development of human resource potential of agricultural organisations in Stavropol Krai.

Keywords: Human resources, migration, rural area, rural population.

Classification JEL: J21, Q19

1. INTRODUCTION

Workforce capacity meeting the requirements of modern agriculture is considered to be one of the preconditions for industry's progressive development. Many Russian scientists have studied its different aspects. Theoretical bases of its analysis and characteristics of main development models are described in research by Noskova M.V. [1,

2], renewal methods are discussed in A. M. Kozina's and A.V. Medvedeva's articles [3]; management approaches are studied in T.V. Ivanova's and A.I. Guleychik's articles [4]. Issues of employment and human resourcing are examined by E.A. Soskieva [5], V.A. Bogdanovskiy [6]. Trends of rural labor market, its condition and prospects are expounded in L.V. Bondarenko's research papers [7].

However the level of supply with executives, professional employees and workforce within the region including its numerical and qualitative properties is underesearched.

This defines the research goal: to estimate agricultural labor supply in Savropol region, one of Russia's big regions, to elicit discrepancy between structure and quality of human resources and tasks for organizing efficient and competitive agricultural production, determining ways for labor supply development.

The input data for the research was taken from annual statistic reports of Federal State Statistics Service for Stavropol region, labor market and regional social and labor sphere monitoring; departmental reviews of staff composition at agricultural enterprises in 2013-2015. Data was also received as a result of expert, executive and employee surveys.

The authors applied abstract-logical, computational and analytical, monographic, economic and statistical methods and expert reviews.

2. PAPER BODY

Possibilities of human resourcing in agricultural enterprises are closely related to demographic setting and factors of human resource renewal in rural areas. The study has revealed that 20.2% of rural population in Stavropol region at the start of 2016 was children and teenagers under 16; 56.5% comprised population of employable age. The dynamics of the population age structure shows that since All-Russian population census of 2002 the share of rural dwellers at the age of 55-59 has changed the most (1.6 times). There is also a significant decrease in the number of teenagers at the age of 10-14 and young people at the age of 15-24 (figure 1). These age group have diminished by 33.1% and 31.1% respectively compared with 2002.
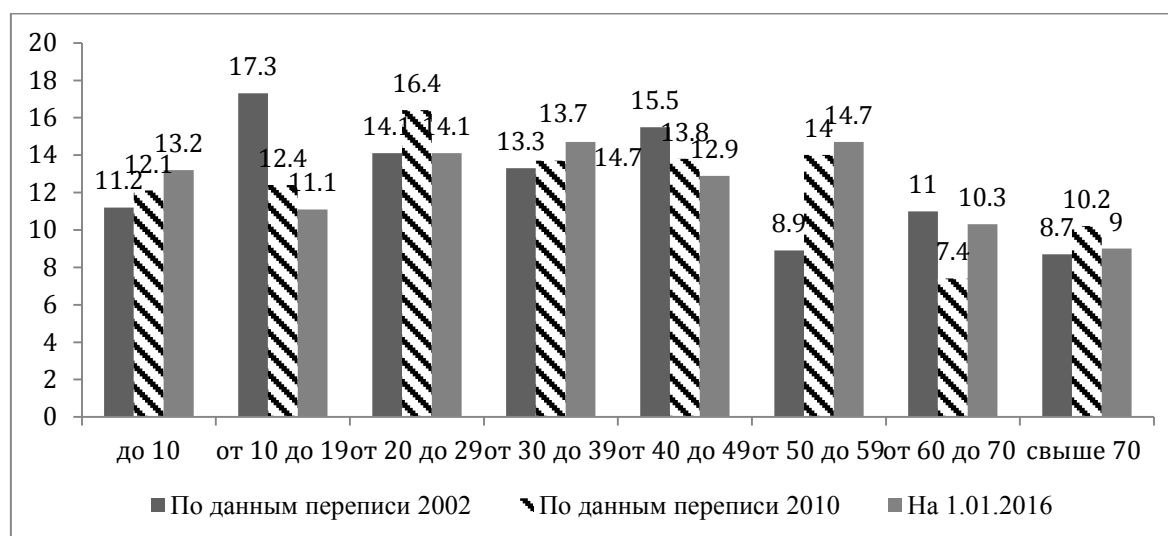
Figure 1 – The dynamics of the age structure of the rural population, % of total number of rural inhabitants in Stavropol region

For each 1000 working-age people there are 770 people at unemployable age According to the forecasts the pressure on productive population in rural areas will grow and will have reached 948 people by 2031. Thus, the trend of the rural population ageing will persist.

The natural increase is losing its values and is ever-decreasing source of rural population growth. For each 1000 people 12.4 – 13.7 is born annually and approximately the same number of people die, on the average (table 1).

Table 1 – The dynamics of the indicators of the natural increase of population in rural areas of Stavropol region (for each 1000 people from a relevant group)

Indicators	2010	2011	2012	2013	2014	2015
Birth rate	12,4	13,4	13,7	13,6	13,7	12,4
Death rate	13,2	13,3	12,9	12,6	12,7	12,4
Natural change (decrease)	-0,8	0,1	0,8	1,0	1,0	-

The natural loss of population is not made up for by means of migration movements. Approximately 40 thousand people leave rural settlements in Stavropol region each year and 35 thousand people arrive. Thus, in the last 5 years rural population is decreasing by 5 thousand people per year due to migration flows (table 2).

Table 2 – The dynamics of rural population migration in Stavropol region

Years	Immigrants			Emigrants			Migration gain (loss), persons	
	Persons	Ratio of external immigrants, %		Persons	Ratio of external emigrants, %			
		total	incl. those from other Russian regions		total	incl. those from other Russian regions	total	incl. those from other Russian regions
2011	28826	49,6	39,4	33686	41,2	40,8	-4860	-2408
2012	35826	50,0	41,3	41282	40,9	40,1	-5456	-1761
2013	36221	52,7	44,5	44398	42,0	40,3	-8177	-1784
2014	37304	53,0	43,4	41710	45,5	40,6	-4406	-723
2015	36335	53,1	41,9	38831	47,1	42,0	-2496	-1083

In 2015 46 % of all migratory movements in the region fall within intraregional migration that causes rural out-migration. The priority direction of intraregional migration flow is "rural areas – urban community".

One in three migrants arrives into regional rural areas from neighboring North Caucasian republics (32.4% of incomers in 2015). More than half of emigrants, who leave the rural area, migrate to Southern and Central Federal districts (25.9% and 25.3% respectively in 2015) (Table 3).

Table 3 – Components of migration gain (loss) of rural population in Stavropol region, persons

Indicators	2011	2012	2013	2014	2015
Migration gain (loss)	-4860	-5456	-8177	-4406	-2496
including migration flows:					
internal (within the region)	-5307	-6482	-8621	-5215	-3496
external	447	1026	444	809	1000
including					
trans-regional	-2408	-1761	-1784	-723	-1083
with CIS countries	2546	2468	1896	1407	2001
with other foreign countries	309	319	332	125	82

The main source of money in rural areas is labor activity. 38.6% of rural population mentioned it during the All-Russian population census of 2010. 30.5% told they lived in dependence, got alimony; 22.8% lived on a pension. Over one third of rural population (34.3%) has two sources of funds. They are labor activity and private farm holding; private farm holding and pension or pension and support of relatives.

60 % of economically active population is officially involved in economic activity. The employment level among economically active population is equal to 70.1 %.

The level of unemployment had decreased in the last 5 years. It was equal to 7.5% on 01.01.2016. Some people are still unofficially employed. Unreported employment, on the one hand, is a sign of self-employment growth among the population, entrepreneurship development based on verbal arrangement (seasonal works, building activity, trade). On the other hand, it deprives employees of some rights and social guarantees provide by official employment as well as it prevents government from receiving tax revenues.

The main sector of employment is agriculture. 303 thousand of people are engaged in agricultural production activity on their private farms; for 149.3 thousand of them this is the only occupation; 153.7 thousand people are also involved in other gainful employment (Table 4).

Table 4 – Involvement of population in agricultural production process in private households in Stavropol region, 2015

Indicators	For sale			For private consumption			
	Total	including:		Total	including:		
		those	those also invo		those enga	including	those also invo

						unemployed	economically inactive	
Number, thous. people.	47,7	24,5	23,2	255,3	124,8	15,9	108,9	130,5
% of those working in private households	15,7	8,0	7,7	84,3	41,2	5,2	35,9	43,1

225,3 (84.3%) thousand people out of the total number of people working in private households produce goods for private consumption; 6.2% are officially unemployed; 47.7 thousand people (15,7%) produce goods for sale.

According to Ministry of Agriculture in Stavropol region the total number of people working in all types of farms was equal to 50.8 thousand people as of 01.01.2016; 90.9% are directly engaged in agricultural production.

During 2013-2015 the number of employees at agricultural enterprises has decreased by 2.7 thousand people (5.1%). The biggest decrease in employees occurred in sheep breading (by 22.5% or 258 people) and bovine cattle breeding (by 16.6 % or 278 people). These changes were caused by livestock reduction and cut-back in wool, milk and meat production. Accelerated growth of poultry farming, on the contrary, was accompanied by growth of the number of employees engaged in the industry. It has increased by 557 people (21.3%) over the last 3 years. There was also increase in the number of employees engaged in commerce, catering and some others industries.

The analysis has revealed scarcity of labour in the last 3 years. According to statistic data provided by the Ministry of Agriculture in Stavropol region there were 1815 vacant positions at regional agricultural enterprises including 378 senior positions and 1437 workforce positions in 2015 (Table 5).

Table 5 – Labour supply at agricultural enterprises in Stavropol region

Indicators	2013	2014	2015	Ratio of 2015 to 2013
Labour supply, total, %	95,4	95,9	96,4	1,1
Shortage of personnel, person	1608	2166	1815	207
Supply of executives and professional employees, %	94,58	95,16	96,81	2,2
Shortage of personnel	446	592	378	-68
Workforce supply, %	95,6	96,1	96,3	0,7
Shortage of personnel	1162	1574	1437	275

Workforce positions predominate within the demand pattern. Workforce demand amounts to 79,2 % of total demand and has increase by 7 percentage points over the period under review (Table 6). The quantity of vacant workforce positions has increased

by 275 person or 23.6% in the last 3 years. Supply of executives and professional employees at agricultural enterprises has grew (16 %).

Table 6 – Personnel demand for vacancy filling in agricultural enterprises of Stavropol region

Occupational groups	Number, person			Distribution of demand, %		
	2013	2014	2015	2013	2014	2015
Executives and professional employees	446	592	378	27,7	27,3	20,8
Employees	1162	1574	1437	72,3	72,7	79,2
Total	1608	2166	1815	100	100	100

Increase in labour supply at agricultural enterprises is ensured at the expenses of professional employees trained in agricultural sciences. The share of executives and professional employees has grown from 87.8% to 90.4% in 3 years. However, only 48% of them have higher education; 42.3% have secondary education. About 10% of executives and professional employees have neither higher nor secondary vocational education, less than 1% study at extramural or part-time form of study.

The most executives of agricultural enterprises have great working experience; 32% of them have held their positions for 10 years and more; 24% - for 5-10 years (Table 7).

Table 7 – Length of work experience of agricultural enterprises'' directors in Stavropol region, % of total number

	2013	2014	2015	Change between 2015 and 2013
Under 1 year	7,3	5,8	8	0,7
Between 1 year and 3 years	17,7	16,3	15,6	-2,1
Between 3 and 5 years	17,2	18,9	20,4	3,2
Between 5 and 10 years	28,2	26,3	24	-4,2
Over 10	29,6	32,7	32	2,4

Long-standing experience however brings a problem of knowledge depreciation. This could be overcome only through advanced vocational training, but only the minor part of executives is engaged in advance training. 35 executives in agriculture of Stavropol region (7% of the total number) have completed some training courses in 2013 – 2015. At the current rate of skill improvement the process of updating knowledge of executive personnel will take over 40 years. These figures do not meet the requirements of accelerated agricultural development and increasing competitiveness of agricultural goods. According to experts, many farm managers do not have sufficient skills for working under modern conditions. They suffer from a lack of financial awareness and knowledge that would enable them to face up to the challenges under conditions of industry innovative

development. At the same time, despite the existing variety of opportunities for advanced vocational training the executives are not interested in upgrading their skills.

As to workforce positions, the share of employees with vocational education within the total amount has decreased from 77 to 75%. The largest share of nonprofessionals is in cattle breeding (34.1%). Their share in crop farming has increased from 13.1 to 21.3 %, including the one among tractor drivers and machine operators - from 8.7 to 10.2 %. In our opinion, this adverse trend reflects underdevelopment of secondary vocational training in the region that does not meet the requirement of the current demographic situation in rural areas and needs of agricultural production process.

Less than 5% of employees upgrade their professional skills each year. According to the Ministry of Agriculture in Stavropol region most of the employees with 3-10-year experience have never completed any training course. Among the factors preventing employees from advanced professional training. Moreover, professional training rarely provides career development or any increase in salary. As a result, employees' qualification is quite low. Under 20% have any approved qualification level. 67 % of tractor drivers and only 4.1% of employees involved in cattle breeding (mainly, poultry farming and machine milking) have skill grades.

3. CONCLUSIONS

In general, workforce capacity building is carried out under conditions of rural population decline and ageing. The level of professional skills and qualification is not sufficient for creating innovative occupational skill structure that could promote positive synergetic effects for increasing benefit from investments into industry's facilities. Thus, it is necessary to improve forms and methods of labour capacity development in rural areas including through enforcing direct and indirect influence of government authorities.

REFERENCES

1.   Noskova M. V. Theoretical bases of human resource studies in agriculture / Bulletin of Altai State Agrarian University. 2007. № 5 (31). P. 67-71.

2.   Noskova M. V. Description of main human resource development models in agriculture / Bulletin of Altai State Agrarian University. 2010. № 6 (68). P. 99-104.

3.   Kozina A. M., Medvedev A. V. Methods of human resource renewal in agriculture / Bulletin of labour practices, agrarian education and innovations. 2013. № 4-6. P. 25-30.

4.   Guleychik A. I., Ivanova T. V. Economic principles and main patterns of workforce capacity formation and management in agriculture / Bulletin of Saint Petersburg State Agrarian University. 2011. № 25. P. 177-181.

5.   Soskieva E. A. Issues of employment and human resourcing in agriculture // Agricultural policy in modern Russia: scientific and methodological aspects and execution strategy. – M. : All-Russian Institution of agricultural problems and informatics named after A. A. Nikonov: "Encyclopaedia of Russian villages", 2015. – P. 380-384.

6.   Bogdanovskiy V. A. On the issue of efficient rural employment patterns // Agricultural policy in modern Russia: scientific and methodological aspects and execution strategy. – M. : All-Russian Institution of agricultural problems and informatics named

after A.A. Nikonov: "Encyclopaedia of Russian villages", 2015. – P. 392-395.

7.   Bondarenko L. V. Rural labor market: condition and trends / Bulletin of agricultural development and social policy. 2015. № 3. P. 2.

REGARDING THE HEALTH OF HUMAN BUSINESSES. ECOLONOMIC PERSPECTIVE

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Abstract

The authors, based on some inter and, especially trans-disciplinary researches performed for more than a decade have as main objective to re-spiritualize the economic science, to turn it into ecolonomy, as a science about the economic life health. As pedagogic derived objective, we meant to draw up a framework programme of the ecolonomy. We highlight the more important conclusions: the old paradigm considering the economics in a fragmentary way, separated from the social point of view and erroneous in ecological terms; it is necessary to consider the economic life as a living organism created by human being, part of the society, of the „whole living entity"; it is required to rethink in holistic vision political and practical terms from the perspective of the win-win principle for all the interests bearers; to adopt the competition of the man with himself instead of the competition between the humans; it is emergently required to measure the organic growth according to the human GDP or the indicators of the national happiness, putting at the base of the economic life the principle of harmony defined by the attributes defined: granting, coherence and resonance.
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Keywords: Sustainable development (healthy), the health of the whole living entity, the holistic of businesses, ecolonomy

Classification JEL: A13, A20, M14,Q50

I.   BACKGROUND OF THE ISSUE

The ecolonomic way of thinking provides that what is healthy for the business organization should be also healthy for the man and the environment, for the community and the State institutions or, on the contrary, only what is healthy for the people and the families, for the communities and the State nations, for the ecology of the living world, should be thus also for the private and public business world.

The evolutions so far from the environment created by man, considered as not proportional (Pope John Paul II, 2008), most of them in counter-sense, if we refer to the

pollution, to the global poverty, the cosmo-technical arming, terrorism, drugs and diseases that kill both the rich and the poor, etc. show the installation of an „Uncomfortable Truth", as Al Gore characterized it (2008): Our living and conscious earth is sick, as our „borrowed" mind is sick!

Believing Einstein, that one cannot solve an aggravated problem by using the same mind that generated it, we made up our mind to argue that we needed a new thinking and living way at planetary scale, that we called the **Ecolonomic way** (Popescu, 2012).

As economists, we assure you we shall focus particularly on the issues of the economic thought, integrating it, however, in the holistic vision, based on the tradition of the Hwa Yen philosophy, expressed by the formula: „One in One; One in All; Everything in One; Everything in All" (Grof, 2007).

Unfortunately for the man and the mankind, for the living world ecology, the **economics was considered in itself, separately to the requirements of the „health of the whole living common"** (Capra, 2004), reaching nowadays to the deepest and most complex crisis from our common evolution, called the **„ecolonomic crisis"** (Popescu, 2011), as it affects the values and culture of life, health and living level of most people, the equilibriums from the environment created by the man, seriously troubling the „cosmostasis" of the ecology of the living world we are organic part of. The current global crisis highlights the existence of some contradictions already aggravated in the evolution of the economic and social life (see also fig. no. 1).

Fig. nr.1 Wrong ways of the evolution in the environment created by man
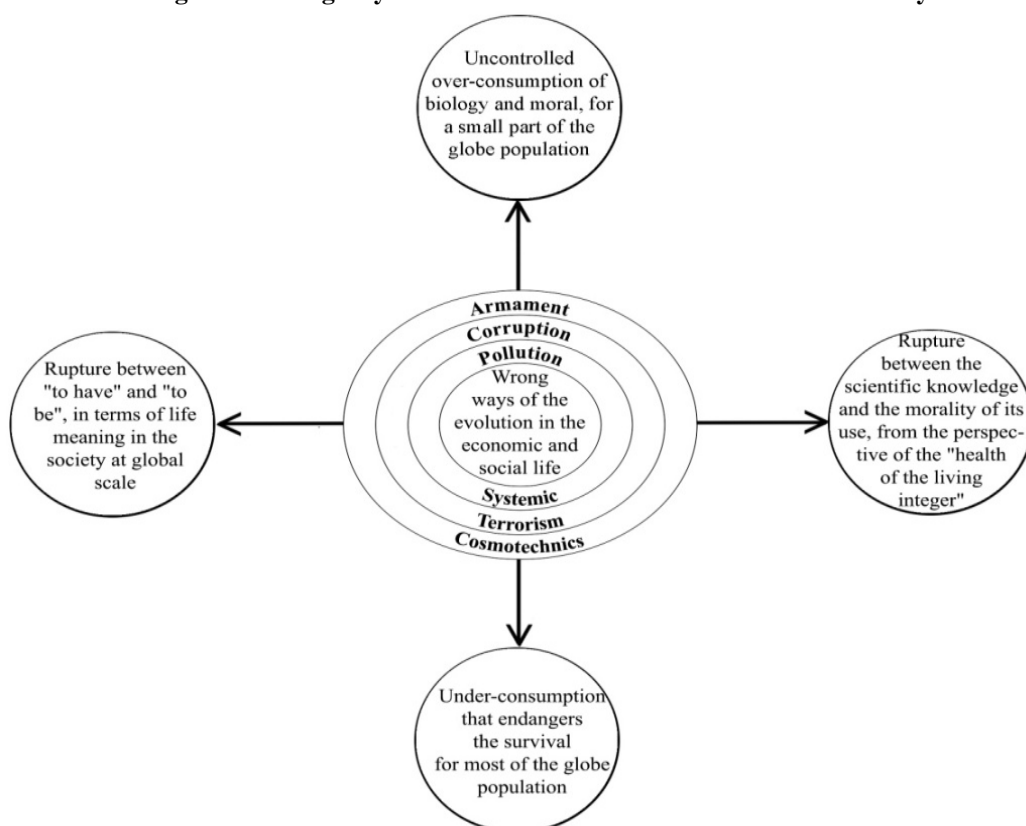
Source: Popescu C., 2012, *Despre viață și economie*, ASE Publishing House, Bucharest, p.460.

We consider a great „luck" for the man and the mankind that this global crisis has occurred now and not later (Popescu, 2011)! This is because it is not too late to lay the foundations of a **revolution of the consciousness**, supported by a **re-spiritualization of the universal education** (Popescu, Tasnadi, 2009) so that we should gradually stop the „fall of the man" and pass to the creation of another „borrowed mind", compatible with the requirements of the „systemic wisdom" Bateson spoke about (apud Capra, 2004).

In our vision, Ecolonomy may be interpreted, as a new economic science studying the „health of the economic life as a part of the whole living entity" (Popescu, 2012), but also **as a new way of living** in the spirit of what the physician Alfred Adler (1995) said: you can be accomplished only if you think, hope and act as a part of the whole living common in which there is your coexistence and succession.

This means that we are interested in the **Man in the engineer, economist** or **physician**, the **lawyer** or the **politician,** etc. and not in the expert himself who knows many things but who does not understand that his choices should be the result of the spiritual maturity in the freedom and responsibility, in the truth and humanity, in beauty, solidarity, social communion and compassion. This means to think and live according to the **tetra-sociology** (Semashko, 2009)**,** as an organic part of „the whole conscious living" we are organic part of.

## II.   REGARDING THE PHILOSOPHY OF THE APPROACH

The approach of understanding the problems business health as an organic part of the „health of the whole living" naturally supposes the highlighting of the methodology we base on, as tools of knowledge, but also of quality modeling.

In the new complexity of the world we live in, taking into account the increasing interdependences, the removal of the determinism and the highlighting of the contradictions of evolution (King, in Giarini, Stahel, 1996) as systemic pollution, global poverty, cosmo-technical arming, overpopulation and overconsumption, uncontrolled by the laws of the human biology and by a moral, the appearance of the new paradigm germs of the **„health of whole living"** became the „spiritual emergency" of the century we started.

The Ecolonomy is meant to interpret the **health of the economic and social life** from the perspective of the harmony of „whole integrated living".

As a **new scientific approach**, the ecolonomy integrates new values, principles, criteria, behaviours, institutions, mechanisms, policies, etc. that should express the **harmony of the natural environment and the environment created by man** and, within this latter, between its interdependent elements thereof: men, families, communities, business organizations, State and international institutions. (see also fig. nr. 2).

Fig. No. 2 Life as „whole integrated livings"
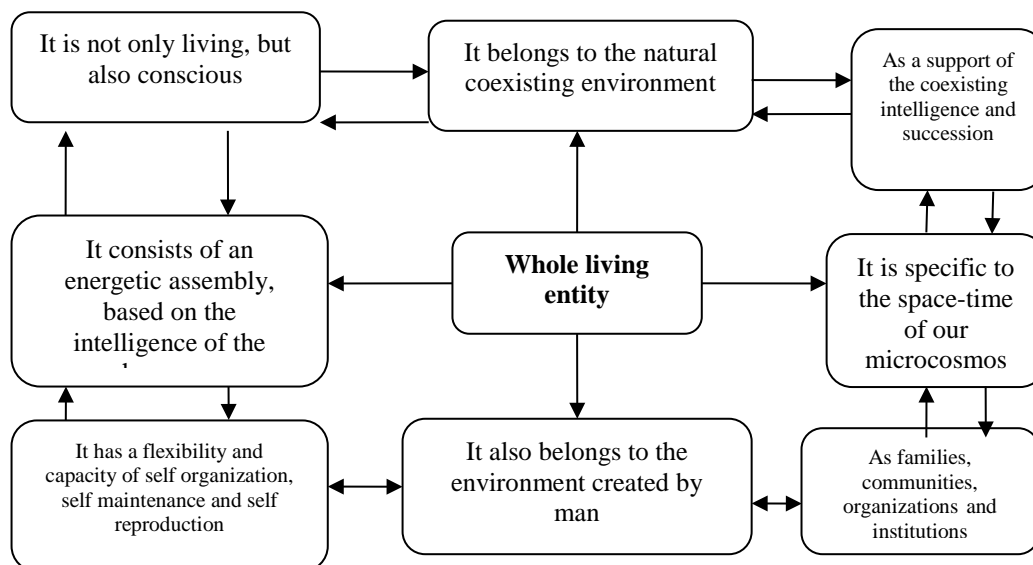
Source: The Authors

The current **global crisis,** characterized by the new vision promoters as being moral, cultural, spiritual and intellectual (Capra, 2004), raises the problem of the mankind transition to the **wisdom age**, based on the **responsibility of using the scientific knowledge, the life experience and the faith in the hope certainty** for the health of the whole living, out of which the economic life of the human society is an organic part. As a matter of fact, we mean to call this future age we have already come into the **Ecolonomic society** (Popescu, Taşnadi, Stanciu, 2014)!

By the **re-spiritualization of the economic science** (Popescu, 2011) we intend to train and develop, at the young generation of economists, at humans in general, authentic knowledge and faith in the way of thinking, dreaming and acting in acts and facts of human individual and social accomplishment.

The **education based on values** (Popescu, Taşnadi, 2014), on the meaning of the life and for all the life which the **ecolonomic education** is part of has the objective of teaching the people how to learn and to wean always in order to **intelligently self govern the own life** (Galbraith, 1996) in harmony with themselves, with the requirements of the health of the whole living. Without the values of the sense, the new economic science cannot be conceived, as well as any new way of thinking and living in love and harmony.

Integrating the **rationality and hope** – as principles required by the inevitable circumstances, related to the **limitation** and **uncertainty** characterizing the micro-cosmos of our world –the **Ecolonomy** lays at the foundation of the **economic life homeostasis of the human society** the rule **„win-win"** (Covey, 2006) for all the co-participants: people and families, organizations and communities, institutions and states – with their entire cultural diversity of living. The rationality without sense leads to depression, while the rationality plus the sense governed by the values of the health of the whole living leads to ecolonomic efficacy (Popescu, 2014) of the type „win-win".

Taking as supreme value the **harmony in acts and facts of individual and social community real life**, the **Ecolonomy** conceives the dynamic interaction between the **economic life homeostasis** and **its social heterostasis** (Selye, 1984) by the

implementation of the attributes **granting, coherence** and **resonance** (Laszlo, Currivan, 2010) in the human and institutional behaviours, in the choices defining our freedom of responsibility under conditions of open dynamic limitation, uncertainty and interdependences.

Dealing with the environment created by the man and his harmony with the natural environment, the **Ecolonomy** interprets and substantiates the efforts and effects in the economic and social life by means of the **ecolonomic indicators**, built on the **gross and net ecolonomic value**, integrating the interests of all co-participants, within the **ecolonomic optimum** criterion, defined by the criterion of the „ **health of whole living entity".**

As **science of the economic life health,** organic part of the whole living, the **Ecolonomy** promotes the **organic economic growth**, as a support of a **healthy development** in the North and the South, in the East and the West of the Earth. It is not about a high or low, fast or slow economic growth, but a proportional, healthy growth.

The Ecolonomy promotes the value of the **freedom of the responsibility** as a key, opening **a new manner of thinking, acting and living at individual and social and community level**, proportionally integrating the **human solidarity and the social communion.** As a matter of fact, the transition of the mankind to the Ecolonomic Society shall mean the integration in the value of the harmony and the other values supposing the coexistence and succession as „whole integrated livings".

III.   ECOLONOMY, AS A SCIENCE RELATED TO THE HEALTH OF HUMAN BUSINESSES

The construction of the ecolonomic thought concerning the economic life as an organic part of the social life and, altogether, of the living world ecology, is a complex process supposing both learning new elements, especially trans-disciplinary, and the weaning of the old useless elements whose application endangers the health of the „whole integrated livings". From this prospect, we suggest to the reflection the main contents of the methodological project related to the Ecolonomy:

The health of whole living entity: what is the whole living entity?; the relationship natural environment – environment created by the man; the health in holonomic vision.

The life in systemic vision: from the Cartesian vision to the theory of the „whole integrated"; the essence of the „systemic wisdom"; the earth as living and conscious body; the life of the environment created by man;

The economy as living body: the economy, organic part of the environment created by man; the economy of the human society, organic part of the living world ecology; the features of the economy as living organism; interrelations and interactions of the economic life; „healthy economy" versus „sick economy".

Principles of ecolonomy: relationship values – principles in the economic life; limitation – rationality; uncertainties – hopes; choice – opportunity cost; freedom – responsibility; interdependences of the type win-win; harmony part-whole, targets – means.

Values of the ecolonomy: values as base of the thought, of the choices and actions in real life acts and facts; economic life and values: of the man, family, community,

organization, institution and environment; diversity, complementarity and compatibility; values, behaviours, consciousness; from the value of the freedom to the value of the harmony;

Human behaviours: nature and society from the man at the base of the human behaviours; manufacturing and consuming man; use of „twin triads" in the interpretation of human behaviours; education, culture and behaviour; **the teacher's oath** – the key of the education re-spiritualization; sense and counter-sense in the manifestation of human behaviours; let's get out of the age of prodigality and irresponsibility; the human behaviours from perspective: life is short and it must be accomplished; continuity and discontinuity in appreciating the human behaviour; human behaviours, sense and countersense performance.

Ecolonomy, as a way of life in harmony: culture of lived life, of labour and love (Adler, 1995); the man works in order to accomplish his life; the world is in Us; the human self governance, as a method of fulfilling the imperatives of human life in the society; the determinations of the ecolonomic way of life; the re-spiritualization of the current way of life; the metanoia spirit in ecolonomic vision; from the way of life to the quality of life in harmony; richness/poverty is in us; the holistic perspective on the life quality.

Harmony of the ecolonomic businesses: the principle of the cosmic harmony and the attributes thereof: granting, coherence, resonance; the **homeostasis** of economic life as an „invisible hand"; the **heterostasis** of economic life as a „visible hand"; the correction of excesses and deficits of the human and institutional behaviour; from the competition of the man with himself by cooperation and collaboration; the health of whole living – optimization criterion by harmonization.

From the crisis of the economic life to the crisis of the economic science: the crisis as excesses and deficits of behaviour exceeding the critical mass of the homeostasis of the „whole living"; sense behaviours: the consciousness of the crisis, adjustment, collaboration and cooperation between the „twin homeostasis" and the „social heterostasis", faith and hope; the impossibility of the actual economic science of providing valid answers to the current ecolonomic crisis; ruptures of the sense: economy-man, economy-family, economy-community, economy-society, economy-natural environment; non proportional evolutions: knowledge and technology to „upside", morality of their „downside" application (Pope John Paul II, 2008); the threatening progress; the impasse of the economic science by ruptures between the part and the whole, from quantity and quality point of view, unilaterality and multilaterality of the concepts and theories; theories in themselves; unilaterality and integrality of the optimum criteria; continuous, not differentiate economic growth, etc.; social finality of the growth and development (to whom does it serve?); the business for the people, the economy for the people; for a new economic science: **ecolonomy.**

The true human economy: the economy and imperatives of the human life; targets and optimum criteria; targets-means relationship; human economy – healthy economy; index of human economy (I.E.U.); human GDP; economic benefit – healthy benefit; ecolonomic valuing of the following factors: natural, ecologic, spiritual, scientific, economic, institutional, religious, traditional, etc.; the true human economy and the human progress (Pope John Paul II).

Organic economic growth: characterization of the concept of organic, healthy, differentiate, harmonious economic growth; relationship organic, healthy growth – human progress; the culture of organic economic growth; the factors of the organic economic growth; quality model of the factors of the organic economic growth; institutions of the organic economic growth; benefits of the organic economic growth (of the type win-win).

Cyclicity of the evolutions: nature of the cyclicity; diversity cyclicity; characterization of ecolonomic cyclicity; heterostasis of the cyclicity (keeping under control the negative externalities); model of ecolonomic cyclicities; harmony – disharmony; love and hatred; ecolonomic cycles and „fall of the man".

Ecolonomic equilibrium: characterization according to the rule of the „integrated whole"; equilibrium-harmony; relationship equilibrium-disequilibrium: interactions, manifestation types, sense and countersense; relationship between the revolution of the means and the revolution of the human expectations; the analysis of some ecolonomic disequilibria: economy-man, economy-family, economy-community, economy-society, economy-natural environment; human, social, community, economic, ecologic, institutional, cultural, spiritual disequilibria: systemic contamination, human and social poverty, overconsumption, underconsumption, cosmo-technical over-arming, overpopulation, underdevelopment etc.; heterostasis of disequilibria; interaction disequilibria – critical mass – ecolonomic equilibrium.

The crisis, as excesses and deficit of human and institutional behaviour: the crisis in the systemic vision; the crisis is in us – as living systems; the crisis is in the interactions between the living systems as „integrated whole"; types of deficits in the manifestation of the behaviours and their consequences; types of excesses in the manifestation of the behaviours and the consequences thereof; the interpretation of the global crisis as ecolonomic crisis; re-spiritualization of human and institutional behaviours based on the values of the health of the whole living: harmony, love, authentic knowledge and faith; the wisdom of the crisis as a danger and opportunity: the „twin" responsibilities in exceeding the crisis: homeostasis and heterostasis.

Ecolonomic policies: each living body created by the man makes its own policy; the typology of the ecolonomic policies: at the state level, organizations, environment, families, communities, society; the multi-criterion character: cultural, spiritual, politic, economic, religious, ecologic, institutional, social in determining the ecolonomic policies; harmony characterized by granting, coherence and resonance in the ecolonomic policy: international, national, regional, local in the ecolonomic policy; freedom in responsibility, human solidarity and social communion; democratic mechanisms for controlling and correcting the econolomic policies.

Ecolonomic aggregates: from the individual behaviour to the social-human one; the principles of the ecolonomic measurement; aggregations on the subsystems horizontals: aggregations on the subsystems verticals; ecolonomic values: ecologic, human, social, organizational, community, institutional, national, international; ecolonomic index (E.I.): the human GDP and the humans' happiness; gross and net national happiness; the interpretation of the ecolonomic measurement from the perspective of the human life accomplishment in the society.

Institutions of ecolonomy (as rules of the living): the institutions as rules of the „integrated whole"; the institutions, the homeostasis of the living and the systemic

wisdom; the institutional heterostasis; the interior-exterior relationship within the institutional interactions; institutional harmonization; case study (cultural, traditional, religious, etc. determination of the institutional operation); institutions and faith; for the re-spiritualization of the institutional behaviours.

Ecolonomic government and self government: the substance of the human life is the intelligent self government; the government from the perspective of the „integrated living"; the government and health of the whole living common; determinations of the human and institutional government; relationship human person – human society; from the „walls" between us to the interior „walls"; laws of the healthy self government: human, corporatist, community, regional; time and human action: proactive and reactive; time of the work: to appear, to become mature, to enter the dusk, to disappear; self government: of the family, organizations, state, community, environment; the multiple character of the responsibility in ecolonomic government; the culpability teaches you, the love cures you, the faith makes you wise and the knowledge approaches you of the truth.

Resources of the healthy development: knowledge of the ecologic, cultural, spiritual, religious, human, scientific, economic development potential included in each „whole living"; the problem of cultural and spiritual assimilation of the development potential; the valuing of the discovered potential consciousness; the decisive part of the education based on the values of the sense in the intelligent self government and the search of happiness; from the potential to resources and health development factors; development, as relationship between the **revolution of the means, revolution of expectations and revolution of conscience**; development by projects of the type of the „integrated whole"; long term and very long term strategies of the development harmonization by ecolonomic projects; development areas from ecolonomic perspective; **ecolonomic partnership for development;** win-win type development; from competition to cooperation/collaboration; the interactions renewable resources – healthy development; the ecolonomic costs of the harmonious development.

Ecolonomy and social stress (Popescu et al, 2008)**:** from the individual stress to the social stress; stress, expression and condition of the ecolonomic life; defining concepts; stressing factors; types of social stress; measurement of social stress: global stress index (I.G.S.S.); 1/I.G.S.S. – competitiveness factor of man and society; the relationship social stress – health – human happiness; the stress in the new world of complexity; the ecolonomic bases of the diseases at the level of the whole living and, particularly, in human; the ecolonomic behaviour, as a new method of human and social distressing.

Knowledge in service of the life accomplishment: the laws, knowledge; scientific education and knowledge; scientist's responsibility; institutional responsibility in the field of the knowledge use; scientific knowledge and „fall of the man"; ecolonomic interpretation of the „creative destruction"; the humans – target and mean; life accomplishment by authentic knowledge.

Ecolonomic determinations of the happiness: the happiness, as a purpose of the life lived in the society; characterization of the happiness; deficit of happiness and its consequences; the ecolonomy and the crisis of happiness; the happiness as living in harmony with oneself, with the likes and the whole living; the indexes of happiness at the level of the whole living: human person, family, community, organization, nation; re-spiritualization in favour of the human happiness.

The transition to the Ecolonomic Society based on the wisdom of using the knowledge out of the perspective of the „health of the whole living": the transition, as unit in diversity; cyclicity of civilization; responsibility of using the knowledge, from the perspective of the health of whole living entity;

## IV. VALUES-BASE OF THE HUMAN BEHAVIOUR IN THE BUSINESSES WORLD

The positioning of the human and institutional ecolonomic behaviour based on a **system of values** is essential for the formation and development thereof from the perspective of the requirements of the whole living common health. In the interpretation of our study, the **ecolonomic values represent the faith of the sensitive human being in which he wishes to live, work and love.** The substance of these values is determined by the truth produced by the knowledge of wisdom, the faith in the certainty of the hope, as well as the life experience that served and serve to the health of the life as existence in harmony. In this spirit and the economy, as an environment created by man is a living and conscious organism, a system of interrelations governed by the own homeostasis in harmony with the requirements of the whole living common.

This study places in its center an original concept called **ecolonomy.** The idea submitted to the specialized debate, but also to the public debate in a wider meaning is as follows: if the businesses make good to the humans elsewhere, they also bring benefit for those who assumed the risks, then why should we pollute, make fiscal evasion, etc? Is it needed a profit so that the businesses should be self maintained and organically developed, but this must be a healthy profit, namely a profit as a net ecolonomic income. This way of thinking and living does not mean reform or revolution. It is called "rebellion", i.e. a transformation of the man's inside world, of the conscience of the way of thinking and living, the relationship between "to have" and "to be" (Popescu, Taşnadi, 2012).

As far as the process of knowledge is specific to the human being, willing to understand what happens and why, both in the "outside" world and in our "inside" world, the ecolonomic way of life supposes **using the fruits of the knowledge with responsibility** for "the health of the whole living common". The ecolonomic society we think of, as a future society for our common coexistence and succession, supposes to re-spiritualize the thought: "**knowledge is power**" in order to learn how to think and to live in the spirit of another mind: "**knowledge is wisdom**", means doing good for humans and their families, for communities and peoples, for the living world of the Earth which we are organic part of! From the living of this thought in behaviour acts and facts it should arise that the **Ecolonomic Society,** regarded as a society for the future of the mankind, is based on the values of the **freedom in responsibility, human solidarity and social communion, on compassion**, organically expressed in the cosmic value of our whole living common, called harmony. In the value of the harmony there are, as a matter of fact, "hidden" all the other values defining the nature and society of the man (see figure 3). In our vision, **the ecolonomic behaviour is also an ecologic behaviour** whose value supposes to remove the harmony of the living world of the excesses and deficits troubling its equilibriums, causing serious consequences on the life as a whole, including on the human life. The excesses and deficits caused by the man, besides the system capacity of self regulating and self

governing by flexibilization, extended for a long time, more than the "normal waiting time" endanger the "health of the whole living entity" (Popescu, Taşnadi, 2012).

Fig no. 3 Human health and imperatives of the life in harmony
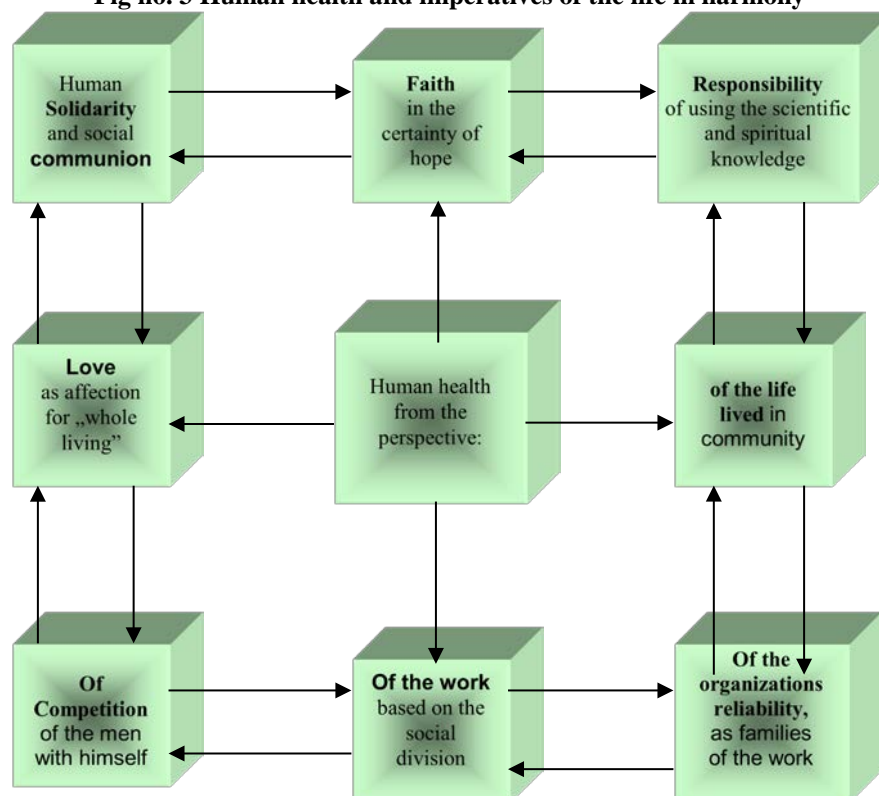
Source: Popescu C., 2011, *Viaţa ca optimism tragic. Perspectivă ecolonomică*, ASE Publishing House, Bucharest, p.92.

Therefore, considering the ecologic criterion (Constantinescu, 2005), together with the human, community, social and economic criteria represents a decisive element that could turn the business world into a beneficial force for the humans and for the planet, for all the interests bearers, regarded as „whole integrated livings".

This means to pass to other modalities of "living together, as in a true global state in which everybody can prosper", says Richard Branson, in which all the participants at the life of the "whole living entity" can win, by distributing proportionally with their effort the ecolonomic value we create. As we said, there is a point of view widely accepted by the scientists of the new thought that the value of freedom exhausted, from the historical point of view, the potential of development. And this because lately the freedom has slipped down in the area of its negative side, as we can do anything, we should not be responsible towards anyone, etc. (Semashko, 2009)!

V. ECOLONOMIC PERSPECTIVE ON THE HARMONY IN THE WORLD OF HUMAN BUSINESSES

Within the inevitable circumstances in which it is manifested the life as a choice, including the economic life, the limitation determines us to integrate in our ecolonomic

behaviour also the **rule of rationality**. The issue supposed by the rationality in the business world is related to the fact that such principle should be subordinated to the man, making his life better. The maximization of the profit outside the man's accomplishment, of the "whole living health" is the greatest misfortune!

A healthy profit for the business environment can be obtained, to the shareholders' satisfaction, without polluting the environment, without firing people from the workplace or manufacturing goods endangering the health and life if the persons involved in business change their behaviour. They try to be responsible from social point of view, to take care of the people working in their companies, to stimulate them to discover their own power in order to do all it depends on them so that they should not waste and not destroy ecologic, social, family or community equilibriums. This is not impossible. The economic life style supposes to reinvent the way "in which we do the things on the base of the lessons learnt from our natural systems", to re-spiritualize the fight with the evolution risks under uncertainty conditions.

Such a way of thinking and living has no connection with the stop of the economic grows, as the „pseudo-science" asserts, but with passing to the fulfillment of an „organic, proportional economic growth" (Wijkman, Rockstrom, 2013).

On the Earth we live not only under limitation conditions, but also in uncertainties. From these inevitable circumstances, the econolonomic behaviour shall also integrate the principle of hope, together with the principle of rationality. As a matter of fact, we think the hope gives sense to the rationality, puts it in service of the people's expectations for better. In the same time, the rationality without sense, as the doctor Viktor E. Frankl says (2008) engenders depression, breaks the humans of the search of the true life sense, troubling their own homeostasis. The rationality without sense brought us today in the most serious ecolonomic crisis of the known history of our world!

The ecolonomic behaviour based on hope supposes this principle should be constantly promoted in life, in the business world. When we make education in love, we teach in fact our children to live in the spirit of the sense of life, to make use of the hope that everything would be better for them and for the ones they love only if they love what they do and if they do what they love, being involved in the process of their own lives improvement.

The hope, as ecolonomic behaviour, is learnt in the first years of life. As a matter of fact, our entire homeostasis contains in its determination the hope as way of life, being the one that dies the last. Even the **reasonable hope** represents the supreme value in the medical bioethics (Popescu, 2006)!

In the way of ecolonomic behaviour, we also included the **faith in the certainty of hope**, out of it arising the energy feeding the convictions that only if we do the things work well we shall be in harmony with ourselves, with our likes, with the whole living. If we think that the **true progress is the moral one**, then the harmony between science and faith is the key of such a **healthy progress** for all the interests bearers at the level of the "whole living". The faith that, in a business, it is very important to pay attention continuously to the humans, says Branson, makes their happiness reflect "in the performance and the state of spirit of the company". The behaviour in the faith that, if you do well in all you undertake, you shall also obtain the desired rewards becomes one of the strongest components of the ecolonomic behaviour, of Einstein's wisdom that only a life in the

service of other people deserves to be lived! We have had for many years the faith, says Branson that, if we deal with the serious matters the humankind faces with, the emergency situations, providing assistance and help, we can solve the situation. However, today, what can we see?

The serious matters most part of our world faces with, as the poverty, diseases, drugs, terrorism, etc., not only that we have not solved, they have kept on and aggravated, becoming the most serious matter of our not proportional evolution, as Pope John Paul II called it (2008, p. 32). What does it mean? That, as a matter of fact, we have not worked at the causes of the things, we have not tried to reinvent them, to respiritualize the way these people live. Of course, the financial aids are needed for the emergency situations. The issue we raise refers to changing the mind, in order to start another way of thinking and living that should part from the faith that the prosperity and poverty are in Us, as human beings, in Us, as families, in Us, as business organizations, in Us as a nation, people and not outside us (Costea, Popescu, Taşnadi, 2011). And then, the new faith supposed by the ecolonomic behaviour is based on what Gandhi said: "to become the change we want to see in the world". Or, as Covey said, "the true change occurs always from our inside to our outside". The change in well starts with you! (Popescu, 1999). This is the faith of the ecolonomic behaviour we also promote, in the new ecolonomic society, hoping to represent the true freedom of responsibility! An ecolonomic behaviour placed also on a certain human spirituality that deserves to be always fed to the values of the sense, in order to harmonize "to have" with "to be", without endangering the own survival, but neither our accomplishment as social human beings. To have in decency and to be within the sense accomplishment, this is the true harmony between the nature and the society in the human being! The ecolonomic way of thinking and living is organically determined also by the **man's culture** (about the culture of the social life), by that spiritual and traditional depth that helps him to come near the sense and significance of the consumed goods, of the choices made, of the renouncements he is capable of, in order to be able to be who he is, s.o.

VI. Re-spiritualization of the business from the ecolonomic perspective. Conclusions for reflection

Interpreting the economic life as an answer-ability of the man to the „avarice" of nature under conditions of uncertainty and directly and integrally subordinating the results thereof to the win-win principle for all the participants - man, family, community, business organization, state and environment, it results the need of balancing what we have with what we should have. From the perspective of the ecolonomic thought, we have demonstrated we should have an economic life whose results should serve to the accomplishment of the human being in harmony with itself, with the likes, with the whole living entity. The crisis of the economic life, as it is interpreted by the ecolonomic way of thought shows it the business world is in counter-sense, both with respect to the aspiration to better of most people and of the requirements supposed by the dynamics of the ecologic equilibrium.

From here, it results, in our opinion, the emergency of re-spiritualizing the economic life, i.e. rethinking it totally from the perspective of the compatibility of its

effects with the requirements of the health of whole living entity the man is part of. Such a process supposes the introduction of a new system of measuring and appreciation of the economic growth and, subsequently, rethinking the economic policies from the perspective of the application of the principle „win-win" for all the economic interests bearers (Popescu, Stanciu, Popescu, 2013).

In the spirit of the window open to the new way of thinking and living that we called ecolonomic, we suggest you starting with our spiritual emergency: **to reposition the human business in harmony with the people's expectations, with the logics of the world we are organic part of, defined by granting, coherence and resonance.**

At Einstein (2008) we met a famous maxim full of meaning, that „only a life in service of other people deserves to be lived" although the selfishness is the essence of the human nature!

It is, as a matter of fact, the same vision we also meet at Pindar (Popescu, 2013), when he interprets the nature of the healthy profit: „a profit the company obtains with the agreement of those who produced it". (see also figure 4).

Fig. 4 Interactions of the healthy profit
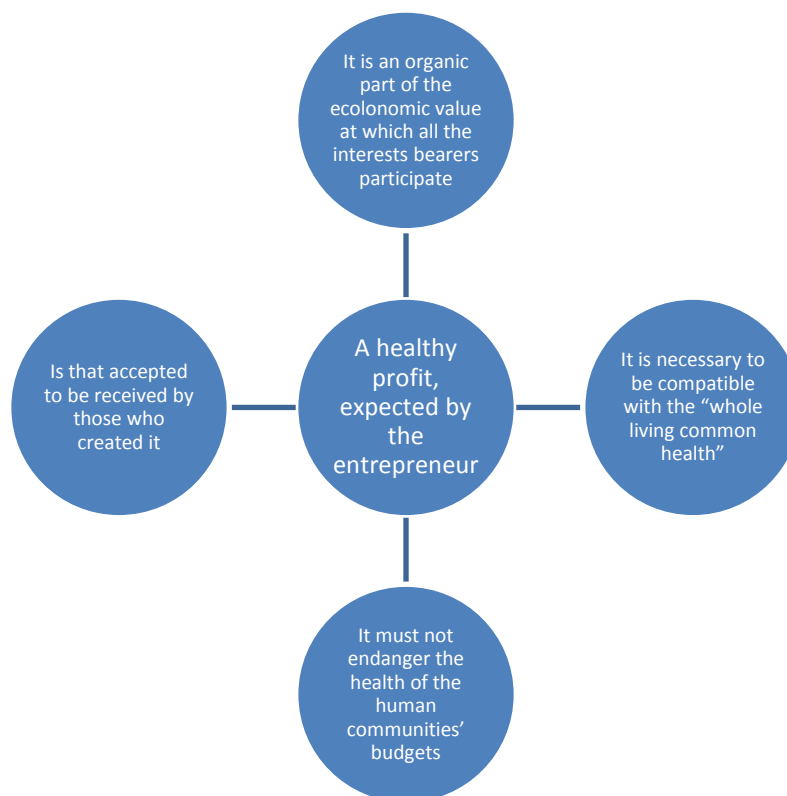
Source: Popescu C., 2012, *Despre viaţă şi economie*, ASE Publishing House Bucharest, p.461.

However, a profit generated by a business dissatisfying the people by the stressing working atmosphere, by the incomes obtained in disdain to their work, not speaking about their aspirations, generating goods that endanger the consumer's life or performed by

polluting the air and the water, the ground and the forest, etc., is an **unhealthy, cancerous profit** (Capra, 2004)!

In the spirit of the above, we appreciate it is significant the practical conception, lively demonstrated by Richard Branson and expressed in the mentioned work by the words (2012): „… doing good is not only destroying the environment, not only polluting, but also removing the pollution appeared in the latest centuries, since the industrial revolution. Restoring the harmony with nature. But this does not suppose only doing less evil; our obligation is to improve the people's lives and the planet condition by means of the business. It also means helping those less lucky to find a way to earn his living so that to be able to have a dignified life that - like all the human beings – deserve... it means reinventing the way we live in, in order to create a more balanced, a healthier and more peaceful world

The ecolonomy is considered by us as representing the step to a new economic science for the business world, conceiving the economic life health and the generated profits from the perspective of the „ whole living health" out of which the human society is organic part.

Taking into account what Einstein said, that the „important matters we are facing with cannot be solved by remaining at the same level of the thought as when we created them" (apud Thorpe, 2007), the exit of the ecolonomic crisis in which we are and the inscription of our common evolution on the requirements of the „whole living health" suppose another way of thinking and living that we called the „ecolonomic" way, the way of the harmony with ourselves, with the likes, with the whole living common. It is, in fact, the way of the life lived in love (Tolstoi, 2009)!

No matter what the name of this science will be, the essence of the change process, we think it is necessary to assure the health of the economic life, as a lively organism created by man, so that a healthy economy should also be an efficient economy from ecolonomic point of view. Any result of the economic life and not only, not endangering the health of the man and of the family, the health of the human communities and the state institutions, as well as the health of the environment generates win-win for all the participants and not win only for a few and loss for the others, as so far. This also represents the essence of the wisdom age from the perspective of the responsibility of using the knowledge for the health of whole living entity.

REFERENCES

Adler, A., 1995, *Sensul vieţii*, IRI Publishing House, Bucharest, p.201.
Branson, R., 2012, *Afacerile pentru oameni*, Publica Publishing House, Bucharest, pp.34,19-20.
Capra, F., 2004, *Momentul adevărului.Ştiinţă societate şi cultură.O viziune fascinantă asupra unei noi realităţi înconjurătoare. O reconciliere a ştiinţei cu spiritul uman, pentru un viitor durabil*, Tehnica Publishing House, Bucharest, pp.496-497,3,505.
Costea, C., Popescu, C., Taşnadi, A. (coord.), 2011, *Criza e în noi*, ASE Publishing House, Bucharest, pp.451-470.

Constantinescu N.N., 2005, *Principiul ecologic în ştiinţa economică*, Milena Press, Publishing House, Bucharest, p.123.

Covey, S.R., 1996, *Eficienţa în şapte trepte. Un abecedar al înţelepciunii umane*, All Publishing House, Bucharest, p.27.

Einstein, A., 2008, *Cuvinte memorabile*, culese şi adnotate de Alice Calaprice, Humanitas, Publishing House, Bucharest, p.158.

Frankl, E.F., 2008, *Omul în căutarea sensului vieţii*, Meteor Press Publishing House, Bucharest, p.126.

Galbraith, J.K., 1997, *Societatea perfectă: la ordinea zilei binele omului*, Eurosong&Book Publishing House, Bucharest, p. 67.

Giarini, O., Stahel, W.L., 1996, *Limitele certitudinii*, Edimpress Camro Publishing House, Bucharest, p.43.

Grof, S., 2007, *Dincolo de raţiune. Naştere, moarte şi transcendenţă în psihoterapie*, Curtea Veche Publishing House, Bucharest, p.534.

Gore, A., 2007, *Un adevăr incomod*, Rao Publishing House, Bucharest.

Laszlo S., Currivan, J., 2010, *CosMos. Un ghid al co-creatorului spre o Lume Unitară*, For You Publishing House, Bucharest, pp.98-99.

Papa Ioan Paul al II-lea, 2008, *Enciclice*, ARCB Publishing House, Bucharest, pp.34-38, 332-342, 32.

Popescu C., 2014, *Farmecul economiei,* Bibliostar Publishing House, Rîmnicu Vâlcea, pp.169-171

Popescu, C., 2012, *Despre viaţă şi economie,* ASE Publishing House, Bucharest, pp.388-391, 460, 461, 231-261.

Popescu, C., 2011, *Viaţa ca optimism tragic. Perspectivă ecolonomică,* ASE Publishing House, Bucharest, p. 92, pp.373-391,

Popescu C., Cred că este un mare noroc că a venit această criză peste omenire acum şi nu mai târziu, *Formula AS*, nr. 952 ianuarie 2011, http://www.formula-as.ro/2011/952/spectator-38/prof-univ-dr-constantin-popescu-cred-ca-este-un-mare-noroc-ca-a-venit-aceasta-criza-peste-omenire-acum-si-nu-mai-tarziu-13282, accesed in 20 february 2015

Popescu, P., 2006, *Raţionalitate şi speranţă. Paradigma sănătăţii întregului viu*, Renaissance Publishing House, Bucharest, p.238.

Popescu, C., 1999, *Preţul bucuriei de a trăi*, Eurosong&Book Publishing House, Bucharest, pp.123-131.

Popescu, C., Taşnadi, A., Stanciu, M., 2014, From sustainable development to healthy development. The ecolonomic perspective, *Management strategies*, Year VII, Special Issue, Ed. Independenta Economica, Pitesti, pp.21-31.

Popescu, C., Stanciu M., Popescu, A., 2013, The ecolonomic behaviour the base of healthy profit, *Metalurgia International* vol XV, no. 10, pp.45-48.

Popescu, C., Taşnadi, A., 2012, Global crisis. An ecolonomic approach, *Annals of the „Constantin Brâncuşi" University of Târgu Jiu*, Economy Series, Issue 1/2012, pp.24-32.

Popescu C et al., 2008, Social Stress in the Complexity of New Economy, *Metalurgia International*, vol. XIII, no. 2 Special Issue, pp.92-104.

Popescu, C., Taşnadi, A., 2009, *Respiritualizarea. Învaţă să fii OM*, ASE Publishing House, Bucharest.

Popescu, C., Taşnadi, A., 2014, Spre o societate ecolonomica prin educaţie în iubire şi înţelegere integrală a vieţii, Educaţia din perspectiva valorilor TOM VI, Summa Pedagogica, Opriş D., Schiau I., Mosiu O (eds), Ed. Eikon, Cluj Napoca, 2014, pp.18-25.

Selye H., 1984, *Ştiinţă şi viaţă*, Ed. Politică, Bucureşti, pp.324-327.

Semashko L., *Harmonious Civilization Universal Declaration*, 2009, publicat online pe http://www.peacefromharmony.org/?cat=en_c&key=375 accesed in 10 march 2015.

Thorpe, S., 2007, *Cum să gândeşti ca Einstein. Învăţaţi regulile şi descoperiţi-vă genul ascuns*, Meteor Press Publishing House, Bucharest, p.31.

Tolstoi, L., 2009, *Despre Dumnezeu şi om, din jurnalul ultimilor ani*, Humanitas Publishing House, Bucharest

Wijkman, A, Rockstrom, J., 2013, *Falimentarea naturii. Negarea limitelor planetei*, Compania Publishing House, Bucharest, p.13.

RELATIONSHIP BETWEEN INEQUALITY AND ECONOMIC GROWTH: A SURVEY OF THE LITERATURE

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Abstract
Inequality has represented and continues to represent a permanent concern for researchers in the field, and a challenge for both developed and developing countries. This concern led to the development of many theories, assumptions and assertions. While in the middle of the last century studies indicated that reducing inequality would lead to a decline in economic growth, recent studies indicate on the one hand that reducing inequality is harmful for economic growth, and on the other hand that reducing inequality is beneficial for economic growth. The purpose of the present paper is to examine this relationship between inequality and economic growth by using methods of systematic and narrative literature review, state of the art review and by generating a synthesis of the recent researches. Based on the existing studies, we try to answer the question in view of the positive or negative effect of inequality on economic growth.

Keywords: *poverty, inequality, economic growth, Gini coefficient.*

Classification JEL: *D63, E25, O15, O40, I24.*

1. INTRODUCTION

Inequality is one of the most imperative long term political and economic challenges, and the relationship between inequality and economic growth has always been a controversial topic among economists, politicians and researchers in the field.

Inequality also represents a defining issue of our time and a quotidian reality of the economic domain. In a recent report of the European Commission (2017) inequality as well as high unemployment and poverty are presented as key concerns of the European Union. The same report portrays Romania as the country with the highest levels of income inequality in the European Union: "the richest 20% of the population have an income more than eight times higher than the European Union average" (European Commission, 2017).

Eradication of extreme poverty and raising the income of the bottom 40% of developing countries represent a key objective for global development of The World Bank Group (Brückner and Lederman, 2015). According to the International Monetary Fund income distribution denotes a cause and a consequence of economic growth (Ostry and others, 2014).

2. INCOME INEQUALITY AND ECONOMIC GROWTH

The specialized literature contains numerous analyses, studies with a long history, which investigate the correlation between income inequality and economic growth. The

inverted-U relationship between the development level of a country and its degree of income inequality, proposed by Kuznets in his famous paper "Economic growth and income inequality" published in 1955, inspired a vast number of publications on the relationship between inequality and economic growth.

Kuznets (1955) argued that "inequality within nations rises in the early stages of economic growth, becomes more pronounced at intermediate levels of development and decreases thereafter as countries became wealthy" (Kuznets, 1955).

Fig. no1. Hypothetical Kuznets curve (Kuznets, 1955)

In his opinion only economic development and the need for redistribution could reduce inequality. Kuznets' inverted U-curve hypothesis can be indubitably considered as one of the most important statements ever made on inequality and development (Moran, 2005).

Akinci (2017) considers that Kuznets Hypothesis has divided the researchers in two groups: 1. the group who confirms the causal relationship between economic growth and income inequality - Minami (1998), Huang (2004), Lin and others (2006), Gelan (2008), Shahbaz (2010), etc.; 2. the group who refused the link between income inequality and economic growth – Hsyng and Smith (1994), Squire (1998), Angeles (2010), Ikemoto and Uehara, Deininger and Squire (1996, 1998), Schultz (1998), Ravallion (1995), etc. Ravallion (1995) considered that "the data do not suggest that growth tends to either increase or decrease inequality".

Among the authors whose concern is the study of the relationship between income inequality and economic growth, we also mention: Cingano (2014), Cooper (2014), Piketty (2014), Stiglitz (2015), Galbraith (2016), etc.

In his paper Cingano (2014) identified three cases in which greater inequality might reduce growth and two cases in which greater inequality might increase growth. Greater inequality might reduce growth if: a. "greater inequality becomes unacceptable to voters, so they insist on higher taxation and regulation, or no longer trust business, and pro-business policies, all of which may reduce the incentives to invest; b. in presence of financial market imperfections, implying that the ability to invest of different individuals depends on their income or wealth level; c. if the adoption of advanced technologies depends on a minimum critical amount of domestic demand". Greater inequality might increase growth if: a. "high inequality provides the incentives to work harder invest and undertake risks to take advantage of high rates of return; b. higher inequality fosters aggregate savings, and therefore capital accumulation, because the rich have a lower propensity to consume."

One of the most important studies in the field of income inequality and economic growth was conducted by Piketty (2014). In Piketty's opinion "inequality is not an accident, but rather a feature of capitalism, and can only be reversed through state interventionism" (Cooper, 2014).

Nobel Prize-winning Joseph Stiglitz (2015) explained how US economic policies exacerbate inequality: "we could achieve more equality, but only at the expense of overall economic performance. It is now clear that, given the extremes of inequality being reached in many rich countries and the manner in which they have been generated, greater equality and improved economic performance are complements". (Stiglitz, 2015).

The relationship between income inequality and economic growth also represents a great topic for Romanian researchers. Molnar (2010) presented in her study the results of the measurement of Romanian households' income inequality during 1995-2008 years. By using a set of inequality indicators like Kuznets index, the Éltetö-Frigyes indices, the Gini coefficient, the Theil index, the Atkinson index, Molnar (2010) analyzed the income inequality in Romania and concluded that: 1. along the transition to the market economy income inequality increased; 2. the economic crisis had a negative impact on household income; 3. the social protection had an important contribution to the leveling of income distribution; 4. policies dedicated to increase and to improve employment, development of agriculture, equal opportunities to education are also factors that can contribute to reducing inequality in the long term.

Domnișoru (2014) tried to explain the drop in inequality by analyzing the gap between wage earners and individuals who are self-employed or contributing family workers. Based on the 2011 Romanian Household Budget Survey, Domnișoru shows the impact of social insurance and social protection transfers on the Gini coefficient.

Andrei and Crăciun (2015) presented particular models used to verify the relationship between growth and inequality: Islam's model based on "inverted-U" Kuznetz, the nonlinear model of income inequality by Barro (2000), Gregorio and Lee (2002), Alesina and Perotti (1996) system for the econometric estimation, etc.

Crețu (2016) tested two simple regression models demonstrating that: 1."income inequality has a negative influence on overall life satisfaction"; 2. a higher income inequality between counties. Crețu concluded that authorities need to find solutions "to limit the expansion of this unfavorable phenomenon".

4. CONCLUSIONS

Our research is a brief overview of the literature to determine the relationship between inequality and economic growth. The study of the literature highlights different opinions regarding the relationship between income inequality and economic growth. Even though there are numerous studies in this direction, the relationship between inequality and economic growth still remains controversial. While realizing the importance of education for a country development, we propose for our future research directions to explore the relationship between educational inequality and economic development.

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REFERENCES

1. Andrei, A., Crăciun, L., *Inequality and economic growth: theoretical and operational approach*, Theoretical and Applied Economics Volume XXII, No. 1(602), pp. 177-186, 2015.
2. Akinci, M., *Inequality and economic growth: Trickle Down Effect Revisited*, http://onlinelibrary.wiley.com, 2017.
3. Brückner, M., Lederman, D., *Effects of income inequality on economic growth*, Vox CEPR's Policy Portal, *http:// voxeu. org/ article / effects-income-inequality-economic-growth*, 2015.
4. Cingano, F., *Trends in Income Inequality and its Impact on Economic Growth*, OECD Social, Employment and Migration Working Papers, No. 163, OECD Publishing, Paris. http://dx.doi.org/10.1787/5jxrjncwxv6j-en, 2014.
5. Cooper, R., *Why everyone is talking about Thomas Piketty's capital in the twenty-first century,* The week, 2015.
6. Crețu, A.F., *Income inequality in Romania: a comprehensive assessment,* http://www.fgdb.ro/assets/resurse/Income-inequality-in-Romania-a-comprehenisve-assessment_AndreiCretu-1. Pdf, 2016.
7. Domnișoru, C.*, The largest drop in income inequality in the European Union during the Great Recession: Romania's puzzling case*, International Labor Office, Geneva, Conditions of Work and Employment, No. 51, ISSN: 2226-8944; 2226-8952, 2014.
8. European Commission, Country Report Romania, Brussels, 2017.
9. Kuznets, S., *Economic growth and income inequality*, American Economic Review, pp. 1-28, 1955.
10. Molnar, M., *Romanian households' income inequality*, Romanian Statistical Review nr. 7 / 2010, pp.1-24, 2010.
11. Moran, T. P., *Kuznets's Inverted U-Curve Hypothesis: The Rise, Demise, and Continued Relevance of a Socioeconomic Law,* Sociological Forum, Vol. 20, No. 2, pp. 209–244, 2005.
12. Ostry, J.D., Berg, A., Tsangarides, G.D., *Redistribution, inequality, and growth*, imf staff discussion note no. sdn/14/02, February, 2014.
13. Perotti, R., Growth, *Income distribution, and democracy: What the data say*?", Journal of Economic Growth 1(2), pp. 149—187, 1996.
14. Piketty, T., *Capital in the twenty-first century*, Harvard University Press, Cambridge, Massachusetts London, 2014.
15. Ravallion, M., *Growth and Poverty: Evidence for Developing Countries in The 1990s*, Economics Letters, Vol. 48 (June) pp. 411-417, 1995.
16. Stiglitz, J., *Inequality and economic growth*, http://onlinelibrary.wiley.com, 2015.

FACTORS AFFECTING POVERTY IN ROMANIA

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Abstract

Romania is one of the poorest countries in Europe. The purpose of this investigation is to determine which factors influence the magnitude of this socio-economic phenomenon. Current availability of data from National Institute of Statistics (NSI) ensures our sample. To understand how Romania can reduce poverty we applied a panel data analysis for the eight Romania's development regions: North-East, South-East, South, South-West, West, North-West, Centre and Bucharest-Ilfov. The authors found a direct link between relative poverty rate and education. In addition, the negative relationship between poverty and pensioners shows the importance of a good government policies. In this context, we propose to focus our attention on the needs of people. Education can be an important determinat of national development, and on the other side, educated people are more willing to understand the role of pension system.

Keywords: *Romania, development regions, poverty, education, pension system.*

Classification JEL: F63, H55, H75, I21, I25, I30, O10
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1. INTRODUCTION AND LITERATURE REVIEW

Poverty is a growing problem that affects a considerable number of people worldwide. Among the factors affecting poverty researchers in the field have identified: education, natural increase of the population, divorciality rate and offence rate. The first part of our research seeks to provide an overview of some studies which analyze these factors, continues with data and methodology, the results and ends with the conclusions section.

The specialised literature contains numerous studies analysing the role of education in poverty reduction. The indisputable link between education and poverty reduction is confimed by Sen (1992) wich considers that a form of poverty is represented by an

inadequate education, Sukati (2010), Awan and others (2011), Chegea and others (2015), etc. Another topic that has gained notoriety is the relationship between poverty and the natural increase of the population. According to Dao (2012), Todaro and Stephen (2012) rapid population growth has a negative effect on economic development, in the developing contries. Fisher and Low (2015), Sharma (2014) examined the economic impact and the financial consequences of divorce. Iyer and Topalova (2014) identify a causal effect of poverty on crime.

2. DATA AND METHODOLOGY

The authors propose five factors (number of pensioners, rate of natural increase, offence rate, divorce rate and enrolled population) to understand poverty phenomenon for the period 2007-2015 (unfortunately, poverty indicators start only from 2007). *Table 1* contains information regarding all variables from our sample.

Table no. 1: Description of the variables used in the panel analysis

Variable	Variable Description	Expected Sign	Source
ENDOGENOUS VARIABLE			
Relative poverty rate	"Relative at-risk-of-poverty rate is defined as the share of poor persons (according to the relative method of estimation) in total population." (NSI)	-	NSI
EXOGENOUS VARIABLES			
Enrolled population	High school education (ISCED level 3)	+	NSI
Number of Pensioners	"Average number of pensioners is resulting by summing up the number of pensioners on payment in every month and dividing it to the number of months in the reference period." (NSI)	-	NSI
Rate of Natural increase	"The population natural increase rate calculates the difference between natality and general mortality rates." (NSI)	-	NSI
Offence rate	"Offence rate represent the infrigements investigated by the police per 100000 inhabitants." (NSI)	-	NSI
Divorce rate	"The divorciality rate is computed by dividing the number of divorces granted in a year to the permanent residence population at July 1st of the given year and is being presented in divorces per 1000 inhabitants." (NSI)	-	NSI

Source: own constructions

As it can be seen in *Table no.1*, we expect that a higher level of divorce rate, offence rate, rate of natural increase of the population, number of pensioners will be directly correlated with the poverty rate, but enrolled population can reduce the level of poverty.

Descriptive statistics and panel analysis were completed in the statistical software Eviews 7.0.

RESULTS

First step in our analysis of poverty is the careful of the descriptive statistics, afterwards we use a panel date set.

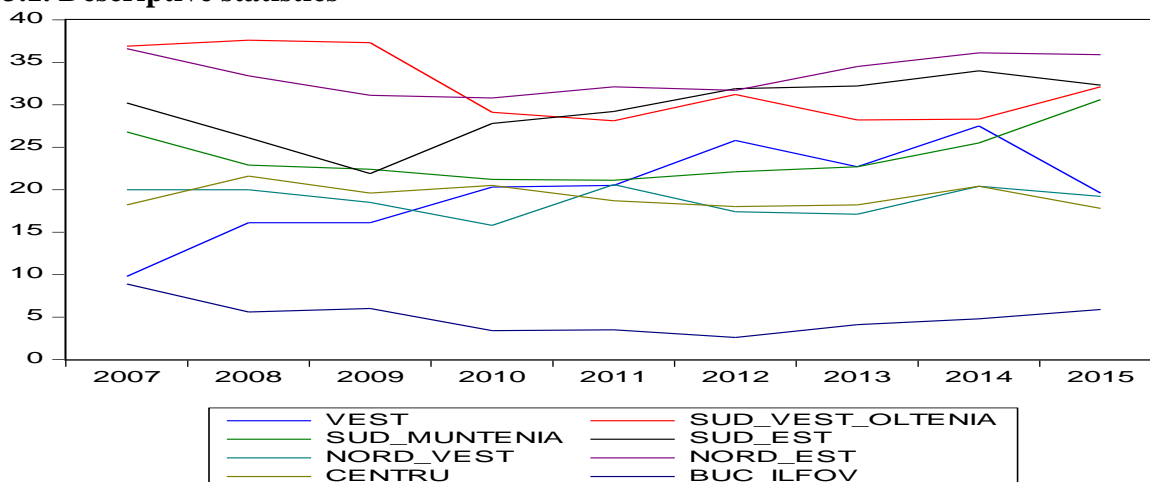### 3.1. Descriptive statistics

Figure no.1 Relative poverty rate in Romania, during the period 2007-2015 (Source: own computations)

The *Figure no.1* presents the evolution of the *relative poverty rate* in Romania between 2007 and 2015, for all the seven Romania's development regions and the Bucharest area. It can be observed that Bucharest-Ilfov presents the lowest rates for this indicator, while North-East (*purple*), South-West Oltenia (*red*) and South-East (*black*) present the highest rates for the indicator, with the former scoring the highest rate in 2015.

Table no. 2: Mean values of all exogenous variables

	Enrolled population	Offence rate	Number of Pensioners	Divorce rate	Rate of Natural increase
North-West	-2.42	1367.00	0.07	1.39	-1.40
Centre	-2.83	1605.78	0.40	1.43	-0.68
North-East	-0.63	1382.89	0.33	1.52	-0.52
South-East	-1.47	1412.56	0.74	1.47	-2.58
South	-1.21	1402.33	-0.39	1.47	-4.06
Bucharest – Ilfov	-2.62	1767.78	-0.19	1.49	-0.48
South-West	-1.87	1545.44	-0.22	1.04	-4.47
West	-2.52	1623.33	0.23	1.51	-3.02
TOTAL	**-1.86**	**1495.56**	**0.11**	**1.44**	**-2.07**

Source: own computations

The growth rate of the enrolled population shows a decreasing tendency in every region. However, the lowest decrease was highlighted in the North-East region, while Bucharest-Ilfov, West, North-West and Center presented particularly low growth rates, with at least 0.5% lower that the country average. The North-East region also presents the lowest levels of offence rate and above average of number of pensioners' growth rate, while attaining the highest divorce rate in the country. However, the natural increase is one of the highest, leveled at -0.52%. On the other hand, Bucharest-Ilfov and West regions

presented the highest rates for offence rate while the former presents a rather high divorce rate.

3.2. Panel analysis

We estimated all the three models: the *Pooled Ordinary Least Square* (Pooled OLS), the *Fixed Effects model* and the *Random Effects model*. For example, according to the Fixed Effects Model, only education and number of pensioners are statistically significant. Moreover, we obtained the following equation:

Relative poverty rate= 13.888 - 0.851*Natural increase rate + 1.975*Number of Pensioners - 0.378*Ennrolled population + 0.001*Offence rate + 4.142*Divorce rate

EQ(1)

3. CONCLUSIONS

Our main results are based on a panel of the eight development regions of Romania: education is an important predictor of poverty rate. In addition, educated people are more willing to understand the role of pension system.

ACKNOWLEDGEMENT

REFERENCES

1. Awan, M.S., Malik N., Sarwar H., Waqas M., *Impact of education on poverty reduction*, Munich Personal RePEc Archive, paper no.31826, pp 1-9, 2011.
2. Chege, J., Stephen, K.A, Wairimu, M., Njoroge, L., *Education and poverty in Kenya: Interrogating the missing link,* International Journal of Humanities and Social Science, USA, Vol.5, No.1., pp 81-88, 2015.
3. Dao, M.Q, *Population and economic growth in developing countries*, International Journal of Academic Research in Business and Social Sicence, 2(10, pp. 6-17, 2012.
4. Fisher, H., Low, H., *Financial implicationsof relationship breakdown: Does marriage matter?*, Rev. Econ. Household, 2015.
5. Iyer, L., Topalova, P*., Poverty and crime: Evidence from Rainfall and Trade Shocks in India*, Working paper 14-067, 2014.
6. Sen, A., *Inequality reexamined,* Harvard University Press, 1992;
7. Sharma, A., *Divorce/Separation in later life: A Fixed Effects Analysis of Economic Well Beingby Gender*, J Fam Econ ISS, 2014.
8. Sukati, C.W.S., *Reducing poverty. Education Planning and policy implications for Swaziland*, Academic Journal Educational Planning, Vol.19, nr.2, pp 8-21, 2010.
9. Todaro, M.P., Stephen, C.S., *Economic Development*, Singapore, Pearson Education World Bank, World Development Indicators, 2012.

ROMANIAN EDUCATION SYSTEM – DESCRIPTIVE ANALYSIS

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Abstract
Education represents more than the cornerstone of any society and the premise in building a solid construction, it is also a human right with a key role for the development of any individual. The Romanian education system has passed through many modifications, in view of the fact that legislative changes in education have been a central point over the last 27 years. Despite all the reform attempts, one can confirm the sad state of the Romanian education system only by regarding the results from the 2016 national evaluation: 24.9% of candidates (37,050 persons) failed to obtain 5 the minimum grade for passing, while the remaining 75.1 % (111,648 persons) obtained passing grades above 5; the rate of promotion being in decline compared to the previous year 2015 (79.3%). Furthermore, the baccalaureate results of high school graduates are more worrying: only 70.1% of candidates passed this test of maturity in 2016. The present study is an overview of the education system in Romania: trends of the school population, rate of enrollment in the formal education system, school dropout rate - are some of the issues that we address in the next pages.

Keywords: Romania, education, dropout rate, school enrollment

Classification JEL: I21, I24, I29.

1. INTRODUCTION

The Romanian education system has passed through many modifications, in view of the fact that legislative changes in education have been a central point over the last 27 years. Despite all the reform attempts, one can confirm the sad state of the Romanian education system only by regarding the results from the 2016 national evaluation.

In the 2007 report "Romania of Education, Romania of Research" of the presidential commission for policy development in education and research, there is the following statement: "Maintaining the current education system in Romania endangers the competitiveness and the prosperity of the country. This system has four major problems: is ineffective, irrelevant, unjust and has a poor quality. It is inefficient in terms of Romanian students' results in the international evaluations (PISA, TIMSS, PIRLS), is irrelevant in relation with the economy and the society of the future (economies and societies of the future will be based on knowledge and the current education system is unable to provide a competitive position in the knowledge economy), is unjust because it does not offer the same opportunities no matter the socio-economic background of the students, has a poor quality when looking at the infrastructure and at the resources of the Romanian education

system". Even though we are ten years away from that report, things have not changed so much regarding the Romanian education system: things are the same or even worse.

2. SCHOOL POPULATION TRENDS

According to a report of the National Institute of Statistics, during 2000-2014 there was a downward trend for school population (3-23 years): the school population had decreased continuously, from 4.6 million people in 2000 to 3.7 million people in the school year 2014-2015 - almost a million persons. Specialists from the National Institute of Statistics estimate that in 2050 the school population will decrease to 2.402 million people if the present birth rate trend prolongs.

School population will decrease at all educational levels, especially in pre-university and higher education. By 2020 the decline will decelerate. After 2020, generations of children born after 1989, still less numerous, potential parents, will determine the reduction of school population by the decreasing of children number. This situation represents the direct effect of demographic developments in Romania: birthrate decline, the phenomenon of external migration, demographic aging by a steady decline of school population.
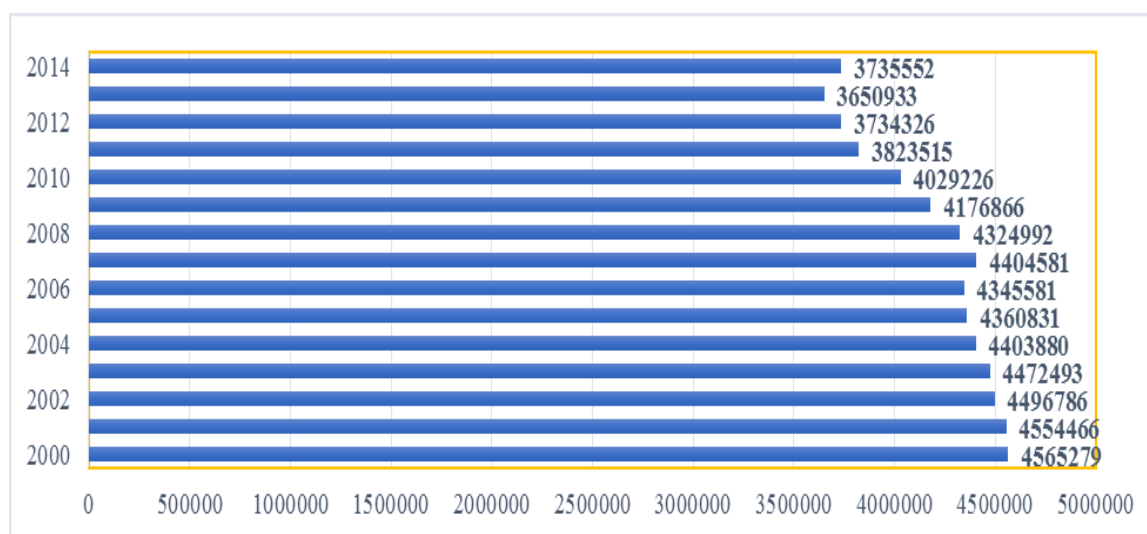

*Fig.no.1. School population in Romania during 2001-2014 (number of persons)
(Source: authors' processing based on information provided by the National Institute of Statistics)*

An analysis of the school population on Romanian counties indicates Bucharest as the county with the highest number of persons included in training and education system (437.330 thousand persons), followed by Iasi (196.078 thousand people), Cluj (164.577 thousand people). Tulcea, Giurgiu and Covasna counties ranked last - the number of persons included in training and education in these counties did not overcome 38.000 thousand.

3. ENROLMENT RATE IN FORMAL EDUCATION

According to the Romanian National Institute of Statistics (2016) "One of the most comprehensive forms of training, formal education holds an important place in social policy formulation, the school population participation in formal education being the driver of human capital development of a nation. During 2001-2014, enrolment rate in formal education has changed for all levels of education. The enrolment rate in primary and lower secondary education has decreased in the 2014-2015 school year with 8 percentage points as compared to 2000-2001. The situation is different in pre-primary education, where the enrolment rate increased from 66.1 % in 2000-2001 school year to 82.0 % in 2014-2015".

During 2000-2014, the enrolment rate in formal education has endured low levels (40.6 % in the school year 2014-2015) despite the fact that enrolment rate increased a great deal. A possible explanation is the specific age group, 19-23 years – many individuals from this group chose to work to the detriment of continuing their studies.

4. DROPOUT RATE

School dropout represents not only an important indicator to assist us in evaluating the performances of an education system, but also an import indicator which signals some aspects of social and economic life that can influence people's access to education. Consequently, school dropout has implications for both social development and economic growth.

Statistical data placed Romania among the European Union (EU) countries with the highest dropout rate: the third place after Spain and Malta, with a dropout rate of 18.1% in 2014.

Table no.1. Top EU countries based on the dropout rate in 2014 (%)

Country	Dropout rate	Country	Dropout rate	Country	Dropout rate
Croatia	2.7	Austria	7.0	Bulgaria	12.9
Slovenia	4.4	Denmark	7.7	Italy	15.0
Poland	5.4	Netherlands	8.6	Portugal	17.4
Czech Republic	5.5	Greece	9.0	Romania	18.1
Lithuania	5.9	Finland	9.5	Latvia	8.5
Luxembourg	6.1	Germany	9.5	France	8.5
Slovakia	6.4	Belgium	9.8	Malta	20.4
Sweden	6.7	Estonia	11.4	Spain	21.9
Cyprus	6.8	Hungary	11.4		
Ireland	6.9	United Kingdom	11.8		

(Source: Financial Journal, article published in the printed edition of the newspaper, May 23, 2015)

One of the central factors leading to school dropout is poverty, "financial difficulties of families, especially large families, disorganized families, without any resources, who have problems in ensuring adequate clothing for the children and

sometimes feel the need to use the children for work in the household or in the field" (Gyonos, 2011).

In Romania's case, statistical data available since 2014 indicates a growing trend of the dropout rate, especially for four categories of children: children from Roma minority group, children originated from poor families, children from rural areas and children with disabilities.

5. CONCLUSIONS

Our research represents a brief overview of the Romanian education system. In determining the image of the current Romanian education system we used statistical data provided by the National Institute of Statistics and by several publications. Based on the existing statistical data, the presentation of some indicators, like the school population in Romania, the enrollment rate in the formal education system, school dropout rates, we are able formulate the following conclusions:
1. The school population recorded a descending trend as a consequence of the declining birth rates;
2. The enrollment rate in the formal education system has decreased, many young people dropping out, due to their desire to become financially independent;
3. Romania in the unfortunate top of the European Union countries with highest dropout rates.

ACKNOWLEDGEMENTS.

REFERENCES

[1] European Commission, *Education and Training Monitor*, 2012.
[2] Gyonos E., *Abandonul școlar – cauze și efecte,* Economie teoretică și aplicată, Volumul XVIII, nr.11, 2011, p.42.
[3] Institutul Național de Statistică, *Tendințe sociale*, 2016.
[4] Raportul comisiei prezidenţiale pentru analiza şi elaborarea politicilor din domeniile educaţiei şi cercetării "*România educaţiei, România cercetării",* Bucureşti 2007.
[5] UNICEF, *Finanţarea sistemului de învăţământ preuniversitar pe baza standardelor de cost: o evaluare curentă din perspectiva echităţii*, Editura Vanemonde, Bucureşti, 2014;
[6] Ziarul Financiar, "*Cu 2,5% din PIB alocate educaţiei, România este la coada clasamentului lumii în privinţa finanţării şcolii*", ediţia publicată în data de 14.04.2015;
[7] World Bank Institute, *Priorities and Strategies for Education*. A World Bank Review, Development in Practice, 1995.

SUSTAINABLE DEVELOPMENT VERSUS MIGRATION

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ABSTRACT

A realistic vision of economic and social development in the coming decades is a necessity for Romania, given the diminishing working population.

The changes would know activity rates in the future is hard to predict in the current labor migration in Europe.

An ingenious representation and social economic development in the coming decades for Romania a priority version is defining and structuring a national strategy for sustainable development center of the population represented and developing a national strategy must include recovery measures a clare demographic situation.

Migration is a fundamental problem in Romanian society we have a segment of more than one third of the total number of households of our country who have the experience of foreign countries and hence the issues raised by cultural diversity.

Moreover, it suggests that it undermines local and regional economies by depriving communities most valuable of their workforce through increased reliance on the outside world and stimulate further migration of populations.

Keywords: economic and social development, labor migration, necessity, employment, national strategies.

STUDY ON THE EFFICIENCY OF EMPLOYMENT OF LABOR RESOURCES IN ROMANIA

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Abstract

In the past, including in the first half of the 20th century, the population and the economy were regarded as relatively autonomous domains. The evolution, structures and material state of the population were analyzed and appreciated in terms of the economic situation existing in time and space, in a given historical period and in a particular country. Only in the second half of the last century, it was understood by the specialists that demographic history can not be broken by economic history.

Economic efficiency in any sector of activity at a narrow, but also at a national level, is determined by the quality of the active labor force, its degree of involvement and valorisation.

Recent theories highlight human resources as supportive of competitive advantage by creating value, with several strategies taking into account, in an increasingly narrower sense, the classic ideas and assumptions of occupational motivation and engagement. The constraints imposed by the competition as well as the community demands determine the other aspects of the use and motivation of the labor force in the Romanian economy, starting from its preparation through specialization, the orientation in the education education for the real fields and for research.

In order to express the economic efficiency of the work, the following indicators can be used: Gross Domestic Product (in real terms) per capita, Share of employed population in the sectors of GDP formation, Share of the contribution of sectors to GDP output, Gross value added per worker Branches of the economy, the average number of hours worked (weekly or yearly), the minimum wage, the annual labor cost of a worker from different branches of the economy.

Keywords: sustainable reconstruction, economic efficiency, sustainable development, labour resources, efficiency of employment

MEN AND WOMEN AT WORK AND DIFFERENCES ABOUT THEIR QUALITY OF LIFE

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ABSTRACT

The full incorporation of women to work is a fact that has begun the twenty-first century and has not gone back, however, the conditions in which they have been incorporated are still far from becoming equal to those of the males. The economic crisis has meant a worsening of the situation for both men and women, but both groups have not always suffered in the same way. In this paper, we analyze the quality of life in relation to situations of lack or privation and to social relations of men and women, in the case of Spain. The micro data of the survey on living conditions, carried out by the National Institute of Statistics of Spain have been used. We have verified that there are significant differences between both sexes.

Keywords: privation, quality of life, gender

NORMALIZED WORK ENVIRONMENTS FOR PEOPLE WITH DISABILITIES FOR SUSTAINABLE DEVELOPMENT: THE PERCEPTIONS OF WORKERS ABOUT THEIR COMPANY INVOLVEMENT

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Abstract

The incorporation of people with disabilities into standardized labor spaces is a process initiated in most of the developed countries and has no turning back. However, there is still a long way to go in order to achieve full social and labor inclusion. This paper analyzes the perceptions of workers in relation to the importance that is given in their work center to the inclusion of people with disabilities and explains this perception from two perspectives: the perspective of people who express their rejection towards the inclusion of people with disabilities in standardized labor environments and the people who express their support. On the other hand, it has taken into account, as a determining variable, the perceptions that workers have about the skills and professional preparation of the disabled people. An analysis with a structural equation model (SEM) has been performed. The population surveyed is that of public administration professionals. The results indicate that all workers perceive little attention to workers with disabilities on the part of their company. In addition, it is verified that the greater the professional training perceived in people with disabilities, the greater the desire to support them in the workplace and the less the rejection.

KEYWORDS: Social Sustainability, Labor Market, Disability, Perceptions.

REGIONAL DEVELOPMENT AND ECONOMIC COHESION – RESULTS AND IMPACT OF COHESION POLICY ACCORDING TO EUROPEAN COMMISSION'S ASSESSMENT

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ABSTRACT

European Cohesion Policy, known in its early stages as the European Regional Policy experienced overtime an extremely complex, difficult and challenging development and evolution process. During its six decades of operation, Cohesion Policy has undergone dramatic changes that have targeted institutional structure, policy instruments and financial allocations, up to a radical redefinition of objectives and principles. Its approach has changed radically from the principles of redistribution and economic balance towards promoting efficiency and performance. [1]
Along with its development and evolution the Cohesion Policy was subject to a lot of criticism accusing its lack of economic impact, little or no cohesion results along with inefficiency of funds allocation and low economic growth. In response to such criticism but moreover to provide accountability of the Policy and gain member states support for its extension and increased financial allocation, the European Commission has contracted evaluation studies and issued yearly development reports that emphasise the impact and achieved results.
The current article reviews the impact of Cohesion Policy in terms of territorial convergence and regional development within the member states from the European Commission own assessment and evaluation reports, pointing out the core achievements that backed the Policy for over 6 decades.

KEYWORDS: European Cohesion Policy, Evaluation, Impact, Convergence

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[1] Christiane Krieger-Boden, 2016, EU Cohesion Policy, Past and Present: Sustaining a Prospering and Fair European Union. Kiel Working Paper No. 2037 | April 2016

EUROPEAN COHESION POLICY 2020 – A ROAD FROM ECONOMIC BALANCE AND TERRITORIAL COHESION TO SMART, SUSTAINABLE AND INCLUSIVE GROWTH

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ABSTRACT

European Cohesion Policy is currently one of the most complex and important social and economic policies of the European Union being the second most expensive in terms of allocated budget, after the Common Agricultural Policy and one of the key pillars to implement Europe's 2020 Strategy for smart, sustainable and inclusive growth.

Officially launched in 1986 by the Single European Act, the history of Regional (Cohesion) Policy dates way back, in 1957, when the Treaty of Rome underlined the need to address and develop an economic regional policy that will insure harmonious development and reduce economic disparities between various regions from the Member States. The Regional Policy perused this rather economic redistribution principle for many years, aiming to ensure better territorial cohesion between the member states. However, the global economic environment, world economic crisis along with the EU enlargement process towards less developed member states has failed to ensure such cohesion, generating even higher economic disparities.

Starting with the Lisbon Strategy and the current Europe 2020 Strategy the European Cohesion Policy has gradually shifted its objectives and development approach towards a more efficiency, performance, smart and sustainable development.

The article reviews the strategic shift in Cohesion Policy approach towards development, its current objectives, but moreover the challenges that arise from this over-audacious perspective.

KEYWORDS: European Cohesion Policy, Cohesion Policy Reforms, Europe 2020 Growth Strategy, Lisbon Strategy

ECONOMIC CRISIS AND INEQUALITY IN EUROPE: EFFECTS ON YOUTH UNEMPLOYMENT

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Abstract

The increasing inequalities in Europe are especially high in some countries, such as Greece and Spain. The national framework of social protection, together with the national policies implemented by the states to combat the economic crisis, led to different results in terms of poverty and inequality. The main aim of this work is to analyze the inequalities and its sources, in order to identify those groups that suffer most from poverty and exclusion risk, particularly how crisis has hit the younger and their situation difficulties for getting a job. In the context of the European Union, we analyze the evolution of some macroeconomic indicators, particularly those related to Gross Domestic Product (GDP) and Labor Market indicators, as well as the evolution of the AROPE (At risk of poverty or social Exclusion) index. We applied a descriptive statistical analysis as well as econometric analysis, for assessing the situation of youth at labor market in Europe and in those countries particularly suffering the crisis (namely Spain, as an example). Results shown that the inequality sources come from the distribution of income between the capital and work, and that the main affected sector on labor market was the one of youngest workers.

Keywords: wage incomes, corporate profits, poverty, inequality, social exclusion.

KNOWLEDGE SOCIETY, INNOVATION AND SUSTAINABLE DEVELOPMENT FOR PROMOTING YOUTH EMPLOYMENT IN EUROPEAN UNION

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In recent years the so-called "race against the machine" or the "race following technology" is part of the debates related to employment in general and to youth employment in particular. The demand for workers requires increasingly qualified personnel with highly defined competences in the field of innovative technologies of both a specific and transversal nature (Information and Communication Technologies - ICTs), which is a continuous effort of individuals and institutions. In this paper we analyze the differences in the employment levels of the European Union countries, taking into account the characteristics of these countries, in terms of technological level and innovation effort. For this classification, the variables related to R & D expenditures, as well as to knowledge-intensive manufacturing and service sectors have been taken as reference. A cluster analysis has been conducted for classifying the countries into three different groups, taking into account the membership to which an ANOVA analysis has been performed to verify the existence of differences in youth employment levels. There are differences between countries that stand out for offering knowledge-intensive services to countries that do not reach those levels, nor are they characterized by having an advanced technology manufacturing sector. Then, public policies for improve young workers competencies and boosting long-life learning are crucial for winning the race against the machine and face the challenges of innovation at the workplace.

Keywords:

Youth employment, technology, employment in Europe, cluster analysis

ECONOMIC POLICY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

The purpose of this study is to examine implementation of the policy of sustainable development in agriculture, tourism, energy, services, transport, building, health, local development, business, imposing changing reporting systems at regional, national, international, global levels, lifestyle, strategies, evaluation methods and relations existing, being necessary to modify reporting systems at regional, national, international, global levels, modifying the policies, strategies, lifestyle, evaluation methods and relations at global level.

Speed of response of firms allows adapting to a world in constant boiling.

Today, to live better, man must not only integrate into the economic, technological and social mechanism, but to anticipate developments, to prepare himself to face to new challenges.

Keywords: economic development, quality, productivity, investment, efficiency

ECONOMIC INFRASTRUCTURE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

The purpose of this study is to examine the implementation of a change that requires capital, new ideas, specialists with experience, assuming that reconstruction of built systems to be outlined in the strategy development.

Sustainable reconstruction of economic infrastructure is a long process that adapts to structural and functional changes to its compatibility with the productive capacity and the natural capital.

Economic infrastructure in the context of economic development pursued selecting inputs-outputs and reducing pollution by upgrading amid increasing economic efficiency.

Efficiency in terms of sustainable development has a consistency determined through eco-efficient materials and energy flows between economic infrastructure and natural capital.

Keywords: *sustainable reconstruction, economic efficiency, sustainable development, ecologic effectiveness, economic infrastructure*

SESSION 5
ECONOMIC STATISTICS, CYBERNETICS AND INFORMATICS FOR SUSTAINABLE DEVELOPMENT

MULTI-LEVEL MARKETING. A WORK MODEL
IN TIMES OF CRISIS

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Abstract
The multi-level marketing strategy can be understood as a sales method or as a model of internal organization that some companies use. In Spain this system has its origin in the eighties and is preceded by heavy negativity with regards to its legality. All of this led to the enactment of Law 7/1996, dated January 15, on Retailing, which regulated the legitimacy of these companies and this manner of operating a business. Article 22 of the Law defines it as a special form of commerce in which a company sells its products or services to the final consumer through a coordinated network of traders or independent agents and whose economic benefits are obtained by a single margin on the retail price. Given the current economic crisis, Network Marketing or Multi-level Marketing (MLM) has been viewed as trendy by many enterprises as a form of self-employment or work strategy. In this new economic reality the companies have dispensed with their fixed workers and have replaced them with occasional or independent entrepreneurs under this modality.

Key words: Network Marketing or Multi-level Marketing. Organization of company. Sale. Enterprising.

1. INTRODUCTION

The complex economic situation experienced by Spain since 2008 has seen our economy seriously threatened by the trade and industry crisis. This situation affected mainly the working class, which massively lost jobs and continues to the present day where the unemployment rate reaches 18.4% of the active population. Spain's Unemployment Rates are still very high and very distant from the rest of the EU countries. For example, the rate of the euro zone stands at 9.8%. Given these circumstances, this paper aims to analyze to what extent the multi-level marketing business is present in our economy today, both as a means to obtain income for workers and as a work niche for entrepreneurs.

For this analysis we have to start from the complex nature of multi-level marketing sales since its inception. This means that its treatment has to be studied under multidisciplinary aspects, since not only legal but also economic sciences are involved. This form of business is also called Network Marketing, or Direct Network Marketing (Carmichael, 1995). Multi-level marketing can be understood as one more commercialization formula, or a model of internal organization of a company in aspects

such as the remuneration or recruitment of down line distributors. Somehow the doctrine points out that all multi-level marketing is direct selling, but not all direct selling is multi-level marketing (Marín, 1995).

Some authors have questioned this type of commercialization of products as much for its similarity to pyramidal schemes as for the high expectations that are generated among its distributors by the possibility of obtaining great income or passive income (Legara et al., 2008; Martínez, 2007). What we want to know is if these expectations have led to unemployed workers in a precarious situation resorting to this type of business and if they can be deceived under this designation. The investments to be made are apparently ridiculously low compared to the benefits that can be obtained, according to consulted sources, such as distributors of different types of multi-level marketing (Mir, Molla 1992-1993).

In Spain this type of business is regulated by the Law of 7/1996, dated January 15, on Retailing (BOE January 1996), in which multi-level marketing is defined as a special form of commerce "in which a manufacturer or wholesale trader sells his goods or services through a network of traders and/or independent distributors, but coordinated within the same commercial network and whose economic benefits are obtained by a single margin on the retail price, which is distributed through the perception of variable percentages on the total billing generated by the set of vendors integrated in the commercial network, and proportionally to the volume of business that each component has created ..." (art. 22) (Llanos, Mora, 2009).

The Spanish mandate allows multi-level marketing to act under two basic formulas of doing business, which are not mutually exclusive:

a) as simple sales of products (which would be traditional retail sales)

b) as creation of distribution networks, which allow commissions to be obtained on the percentage of purchases and sales of the distributors that make up the network that the businessman, who in multi-level marketing usually comes to be called an entrepreneur, has created.

The Law also establishes bans on multi-level sales when organizing the marketing of goods and services such as:

a) "An act unfair to consumers pursuant to the provisions of article 26 of Law 3/1991, of January 10, on Unfair Competition" (22.1.a).

b) "When it is not adequately guaranteed that the distributors have the appropriate employment contract or comply with the requirements that are legally required for the development of a commercial activity" (22.1.b).

c) "When there is an obligation to make a minimum purchase of the products distributed by new sellers, without a repurchase agreement under the same conditions" (22.1.c).

In an economically globalized context, the appearance of multi-level sales in Spain was inevitable but showed up late in the 1980s, whereas in other countries they had been operating since the 1950s, as in the case of the United States. We have been able to verify that traditionally women were the distributors of consumer products, cosmetics, personal care, food supplements, etc. sold via direct sales. That is to say what we are seeing is a work method controlled at the beginning by women.

The incursion of men and more specifically of young people is closely related to what Alvin Toffler (1997) pointed out in The Third Wave as the post-industrial society. Information technologies, such as electronics, computer sciences and telecommunications, make possible the existence of this type of business. The future of multi-level marketing runs parallel with the future of these technologies and the multi-level evolution will depend on how these technologies evolve.

2. METHODOLOGY

The process of developing the methodology communication has started analyzing different n regulatory standards. Based on the study of the norm, an objective, has been established: knowledge of the social influence of Network Marketing in working conditions of workers. To that effect, an analysis of legal regulations and a working hypothesis which serves a basis for arriving at results is being implemented. The study realized is framed within the context of legal and social sciences, specifically in the areas of economic analysis and business administration and Labor Law and Social Security. For that reason the methodology used is centered on legislation analysis, statistical studies, and the vision that social doctrine has on the subject.

3. THE EVOLUTION OF MULTI-LEVEL MARKETING IN SPAIN

As we have said, multi-level marketing began to operate in Spain in the eighties. At that time, owing to ignorance of the system and the products distributed by companies working in multi-level marketing, there were complaints from consumer and user associations. These complaints were either due to the quality of the product or the system, and resulted in acquittals in favor of the companies once it was verified that they offered all the guarantees (here we are referring to legal companies). There was an avalanche of negative press against the multi-level marketing system and the system even came to be compared to religious sects (Badenas, 2000).

The frame of Multi-level marketing is subject to what is established in Law 26/1991, dated November 21, on contracts concluded outside Mercantile Establishments and the objectives set forth in Law 26/1984 of July 19, for the Defense of Consumers and Users (see Article 31 of the aforementioned Law). But for the sake of the consumer confidence, a new law was passed, Retail Trade Law (Law 7/1996, of January 15). The explanatory memorandum of this law stated that companies dedicated to multi-level marketing, until the arrival of the Law, found themselves tied to the principle of freedom of contract, which on not a few occasions could be detrimental to the purchasers. Therefore, with the entry into force of the aforementioned Law, the market entered a situation of calm and tranquility, and the rights of the purchasers have been totally protected. This is what the legislator stated in his statement of intent in the preamble to the Law. He noted that the profound changes that have been experienced in retail distribution in Spain, the incorporation of new technologies and forms of sale, and the challenge posed by European Union as well as the dispersion of the current legislation, oblige a legislative effort to systematize, modernize and adapt to the reality of the markets.

The Spanish economy needed, for its proper functioning, an efficient distribution system, which ensures supplying consumers with the best level of service possible and with the minimum distribution cost. To achieve this objective, the market must guarantee the optimal allocation of resources through the operation of free and fair competition. In this sense, the establishment of a framework of good business practice should lead to a better performance of all actors in the sector, the effects of which will lead to a better functioning of competition. These effects are achieved through the creation of a minimum legal framework, which may be supplemented by Codes of Conduct that freely emerge in the sector for its self-regulation.

With the entry into Spain of this distribution system, a problem is raised that is very similar to that which arises in almost all the countries in which this method of distribution penetrates. Most consumers and users confuse multi-level marketing with pyramidal sales, which, although they are two very different selling techniques in substance, are very similar in appearance. Consumers and users are confused because both systems rely on distribution networks. But we have to say that apart from that point everything is different:

a) Pyramid sales are prohibited by Spanish law, article 23 of the Retail Commerce Law as opposed to multi-level marketing sales that are legal according to article 22. Thus, pyramidal sale practices are those provided for in article 24 of Unfair Competition Law 3 / 1991, of January 10, being null and void the contractual conditions contrary to the provisions of said precept. Therefore it will be considered "unfair for misleading, in any circumstance, to create, direct or promote a pyramid sale plan in which the consumer or user makes a payment in exchange for the opportunity to receive compensation derived primarily from the entry of other consumers or users into the plan, and not from the sale or supply of goods or services" (Parejo, 2017).

b) Big pyramidal companies require or recommend the creation of large stocks without guarantee of return (non-reimbursable products), while serious companies advise against the creation of large stocks.

c) The entry into a pyramidal network requires a significant initial outlay, as opposed to the case of legal companies whose entry is free or requires a minimum disbursement of material and products.

d) In multi-level marketing there are guarantees of repurchase or satisfaction, an issue that does not exist in pyramid networks.

On the other hand we must not forget that in Spain the authority over internal trade is transferred to the Autonomous Communities (CCAA), which is why they are in charge of regulating the retail trade, although the General State Administration has the power to establish basic rules whose purpose is to put the general activity in order. The justification of the autonomous regulation in this matter can be found in the explanatory statements of motives in the different norms or in their particular articles, which indicate the expected benefits of the commercial regulation, such as the structuring of cities or the improvement of the ecological quality of the environment. In the case of Galicia, Law 13/2010, dated December 17, of Galicia's internal trade (BOE January 29, 2011) includes in its Article 88 the concept of multi-level marketing selling.

Despite being allowed and being a business possibility, this type of activity has not been increasingly taken up by male workers in Galicia.

4. MULTI-LEVEL ENTREPRENEUR

From the point of view of labor, the job market has not been seen to increase significantly because of the economic crisis. In the case of multi-level companies, their number has not increased significantly since their origins, especially given the technological advance which has taken place in recent times. The amendment of the Retail Trade Law was subsequently modified by Law 29/2009 of December 30 (BOE No. 315 of December 31, 2009) in which the consideration of merchants and independent distributors as entrepreneurs seemed to give new status to this activity, but this only resulted in a barely notable increase in work by couples. The data taken from the Labor Force Survey (Encuesta de Población Activa in Spanish) tell us that of those engaged in this activity, 70% are women and 30% are men. An important new development is that the distributors in this sector are getting younger as a whole. According to the Spanish Association of Multi-level Sales: "direct sales offer a combination of advantages that are appealing to young people in these times of crisis, because they offer the flexibility and freedom of an independent business together with the support of experienced companies". Direct selling has traditionally been a sector dominated by women. Instead, the results of 2015 reflect that more and more men are engaged in this business, indicating that "direct sales have ceased to be seen as a niche for women and instead is being be valued as a better business opportunities".

There are two ways of being a company dedicated to multi-level marketing:

a) Being the so-called parent company. This involves: very high investment costs due to the need to maintain stocks of products; a fast and agile transport system to be able to quickly put a product anywhere in a country; strong computer systems that allow controlling the expansion of the distribution networks; and systems of compensation of proceeds collected by the distributors. This description is a simplified point of view.

b) Being a sub-company within the parent company. These will have to fulfill all the legal obligations provided in the legislation just like any other company. The only costs to start being an entrepreneur would be a small entry fee into companies that require them and that of maintaining a small stock, which many companies do not even recommend since they are able to provide the product in 24 or 48 hours.

The ease of doing business has made it very feasible for a woman or a very young person to start in the business world. She does not need previous professional skills.

5. LEGAL CHARACTERISTICS AND OBLIGATIONS OF THE MULTI-LEVEL ENTERPRISE

A company dedicated to multi-level marketing can adopt the same legal attire as any other company that is in the market. We are simply talking about another form of distribution, so we can choose between being an individual entrepreneur or part of any other corporate structure. The characteristics of this system are:

A) As far as sales are concerned, the characteristics are defined by the personal relationships of the distributors with the customers. These will purchase the products from the seller with whom they find a better deal, regardless of the distance between them.

B) As far as the relationship with intermediaries is concerned, multiple positive human relationships are generated; one distributor sponsors another, introduces the other to the system and helps her or him to develop in it.

C) As far as the relationship with customers is concerned, the connection is individualized and personal. The distributor advises, encourages and helps in the sales relationship, which tends to become more profound and create true bonds of friendship.

D) As far as the development of the professional career is concerned, each distributor self-imposes their own limits to grow in the market, depending on their dynamism and the ability of each agent to generate sales (Fernández, 2003).

In this sense it is important to emphasize the importance of the personal relationship between distributors and distributor-client. Also supported is the idea that customer relationships go beyond commercial ones and this idea adds a number of characteristics with respect to distributors:

a) They are in turn consumers.

b) They have a high sense of belonging to the group which ensures their continuity.

c) They do not need to keep important stocks in their homes, or they may even lack them, since for their businesses they can use the catalogs supplied by the manufacturing company (Cepeda and Martínez, 1991).

In this type of activity, there are premises associated with slogans that speak of "fulfilling dreams", "being a leader", etc., in the same way that utopia is based on dreams of social improvement (Fernández Buey 2007).

6. CONCLUSIONS

First. Multi-level marketing is far removed from a normal pyramidal system, since it uses the consumption of products to make payments to its distributor structure and not from links of people. What is questioned is the fact that the origin of payments to distributors who are at the top, either exclusively or at a very high percentage, is from the purchases of people who are doing the business and not by the sale to final consumers.

Second. Multi-level marketing has been put into question by the high revenue expectations that are generated. This type of business has a flashy "get rich quick" or "earn a passive income or pension" aspect and because its investment is small, it can reach many people from low income levels, making them dream of big fortunes. Therefore, it is necessary to analyze the possibility of generating profits of this type.

Third. There is great difficulty in conducting multi-level marketing studies because they do not use traditional advertising but rather social structures to determine their sales. When using traditional advertising you can, for example, make sales projections and estimate market behavior, which does not happen when you use multi-level selling.

Fourth. There is a clear difference in intentionality between multi-level marketing and the pyramidal business. In the latter the intention to defraud in the behavior of the creator of the pyramid business always becomes malicious. Although it is possible that, at the beginning, the businessman starts with the intention of being legal, he finally ends up converting it into a pyramid scheme when the initial business does not work. These types of pyramid businesses are difficult to identify and dismantle, as they are camouflaged

under the aspect of organizations or companies with fully standardized and legal economic activities. The pyramid scheme has many similarities with standard economic activities, such as multi-level selling.

BIBLIOGRAPHY

Badenas Carpio, J., (2000), La venta Multinivel, Comares, (Granada), págs. 50-55.

Carmichael A.C., (1995) Marketing multilevel y marketing directo de red, edObelisco, (Barcelona), págs. 50 ss.

Cepeda Pérez, J. M., y Martínez López, F. J. (1991). La distribución Network multinivel y las nuevas tecnologías de la información. Esic Market, 73, págs. 103-111.

Fernández, R. (2003). La venta multinivel: una nueva frontera del marketing. Harvard Deusto de Marketing y Ventas, 56, págs., 39-42.

Fernández Buey, F. (2007). Utopías e ilusiones naturales. España, (El Viejo Topo) Intervencion Cultural, pág. 297-299.

Legara, E., Monterola, C., Juanico, D., Litongpalima, M., Saloma, C. (2008), Earning potential in multi-level marketing enterprises. Physica A: Statistical Mechanics and its Applications, 387(19- 20), págs. 4889-4895.

Llanos Matea M.ª, Moray, J.S. (2009), la evolución de la regulación del comercio minorista en España y sus implicaciones macroeconómicas 2009 Documentos de Trabajo nº 0908 Banco de España, Págs. 12-16

Marin López, J.J. (1995), Prácticas comerciales y protección de los consumidores, Revista de derecho privado y constitución nº 5 enero-abril 1995, págs. 125-127.

Martinez, M. (2007), Four networks marketings lies that can kill your business. Home Business Magazine, 173(4), págs. 54-57.

Mir, J. y Molla, A. (1992), "Marketing directo. La distribución en busca del cliente", Distribución y Consumo, 2, págs. 90 ss.

Mir, J. y Molla, A. (1993),"Venta domiciliaria, multinivel y piramidal. Conceptualización y diferenciación", Distribución y Consumo, nº10, págs. 59 ss.

Parejo-Pizarro, I., (2017), La estafa piramidal: Un estudio exploratorio de la víctima. Articles published in this journal are licensed with a: Creative Commons Attribution 4.0. https://creativecommons.org/licenses/by-nc-nd, págs. 64-67.

Toffler, A. (1997), La Tercera Ola, Plaza&Janes, Madrid, pág.562.

TERRITORIAL DISPARITIES REGARDING THE EDUCATIONAL ATTAINMENT LEVEL OF THE ROMANIAN POPULATION UNDER THE IMPACT OF THE URBAN-RURAL TYPOLOGY OF THE REGIONS

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Abstract

Regional disparities understood as inequalities, the backwardness of geographic areas, administrative - territorial units or regions compared with others in the socio-economic development are mainly determined by differences in natural and human resources, and implicit by economic, demographic, political, or cultural differences. Considering the obvious relationship between the education level of the population and level of development of the region of residence and its sustainable development was considered interesting to analyze whether the typology of the geographical regions influences the educational attainment level of the population. To highlight the regional disparities under the urban-rural typology of geographical territory, the 42 NUTS-3 regions of the Romania (counties), were classified into three different categories, respectively: predominantly urban, intermediate and predominantly rural. The study aims to determine whether there is a significant difference between the three categories of regions and the types of training, education predisposition to the resident population. In this sense, was appealed to χ2 test, a nonparametric test used to assess the correlation between two variables, both based on nominal scales. In the study were used centralized data at the national level referring to the population aged 25-64 by educational attainment level, and urban-rural typology, accessed from Eurostat database, for the year 2015, the latest year for which are available official data.

Keywords: Regional disparities, urban-rural typology, development of the region, educational attainment level, nonparametric tests.

Classification JEL: I24, R15

1. INTRODUCTION

Romania faces after the year 1990 with regional disparities, both in administrative units, counties, but especially in terms of urban-rural regions. Marked by profound structural changes in terms of the distribution of the population at the local level under the impact of internal but especially external migration, Romania faces today, on the one hand, with a strong downward trend of population, and on the other hand, especially a lack of qualified human resources needed to meet the challenges XXI century. Massive emigration in recent years of the population of working age, specialized, added to the population decline come to emphasize these issues, and put a great question mark over the economic future of Romania.

Recent studies (Arpinte, D., et. al, 2010; Tesliuc, E., et. al, 2015) revealed that in Romania there are a considerable number of children who have never been to school, in

time that the percentage of young people without relevant education for the labor market is extremely high. Inequalities arising from the regional profile decreased the interest for education and increased the school dropout rate, so many people are still inactive with minimal chance of entering the labor market. Therefore, important changes in economic policies in education, training programs for workforce retraining are necessary (Constantinescu, S., 2013; Macovei, C., 2016), and it needs to be correlated with the addressed population and their distinct types of regions.

The importance of rural areas in the Romanian regional profiles in terms of the new European Union typology of 'predominantly rural', 'intermediate' or 'predominantly urban' regions, are evident when we discuss in term of territorial development. The urban-rural typology of NUTS 3 regions is applying in Romania at the county level. Romania has over 50% of the territory in predominantly rural areas, inhabited by almost 50% of the population. (Polgár, K. D., and Duguleana, L., 2015).

Table no. 1. – Indicators of Romania's urban-rural typology, at the year 2015

Urban/rural typology	Territory		Total population		Total population aged 25-64	
	Km^2	%	Number	%	Number	%
Predominantly urban regions	6.587,00	2,76	2.592.376	13,05	1.597.141	14,26
Intermediate regions	70.126,60	29,42	6.565.929	33,04	3.755.836	33,52
Predominantly rural regions	161.677,70	67,82	10.712.342	53,91	5.851.070	52,22
Total	238.391	100	19.870.647	100	11.204.047	100

Source: Calculated by the author based on data from EUROSTAT: Area of the regions by urban-rural typology [urt_d3area], Population on 1 January by five-year age group, sex and urban-rural typology [urt_pjangrp3] Extracted on 04.02.2017.

According to European Commission, the aim of this new typology based on a variation of the OECD methodology is to provide a consistent basis for the description of these three distinct types of regions in statistical analyses regarding aspects of quality of life. The methodology is based on the share of the rural population of NUTS level 3 regions (counties) and identifies three typologies of regions:

- *Predominantly urban regions:* with a rural population less than 20 % of the total population.
- *Intermediate regions:* with a rural population between 20 % and 50 % of the total population.
- *Predominantly rural regions:* with a rural population more than 50 % of the total population.

The extremely small NUTS 3 regions, smaller than 500 km², are combined with one or more of their neighbors. The methodology considered the size of the cities in the region, too. Therefore, a predominantly rural region becomes intermediate if it contains a city of more than 200 000 inhabitants representing at least 25 % of the regional population. In the same reason, an intermediate region becomes predominantly urban if it contains a city of more than 500 000 inhabitants representing at least 25 % of the regional population.

Considering the obvious relationship between the education level of the population and level of development of the region of residence and its sustainable development was considered interesting to analyze whether the typology of the geographical regions influences the educational attainment level of the population.

2. DATABASE AND METHODOLOGY

To highlight the regional disparities under the urban-rural typology of geographical territory, the 42 NUTS-3 regions of the Romania (counties), were classified into three different categories, respectively: predominantly urban, intermediate and predominantly rural.

The study aims to determine whether there is a significant difference between the three categories of regions and the types of training, education predisposition to the resident population. To determine whether there is an association between educational attainment levels of the population, and the urban-rural typology regarding their residence, we used the χ2 test because the two variables considered were categorical and ordinal.

To identify territorial disparities were formulated the hypothesis of the *χ2*, as follows:

Null hypothesis (H0): The 3 types of regions (predominantly urban, intermediate, and predominantly rural) have the same structure of Romania's population regarding the ISCED11 levels of instruction. (less than primary, primary and lower secondary education (levels 0-2), upper secondary and post-secondary non-tertiary education (levels 3 and 4), and tertiary education (levels 5-8));

Alternative hypothesis (H1): Differences between the three regional typologies of Romania on educational attainment categories by level are significant and not due to random sampling variation.

In the study were used centralized data at the national level referring to the population aged 25-64, as population involved in the labor market, grouped by educational attainment level, and urban-rural typology. Data accessed from Eurostat database, refer to the year 2015, the latest year for which are available official data. (See Table no. 2)

Table no. 2. - Population aged 25-64 by educational attainment level, and urban-rural typology

Year	Urban/rural typology	Total population aged 25-64		Less than primary, primary and lower secondary education (levels 0-2)		Upper secondary and post-secondary non-tertiary education (levels 3 and 4)		Tertiary education (levels 5-8)	
		number	%	number	%	number	%	number	%
2015	Predominantly urban regions	1.597.141	100	269.917	16,9	820.930	51,4	506.294	31,7
	Intermediate regions	3.755.836	100	878.866	23,4	2.219.699	59,1	657.271	17,5
	Predominantly rural regions	5.851.070	100	1.772.874	30,3	3.387.770	57,9	690.426	11,7
	TOTAL	11.204.047	100	2.921.657	26,1	6.428.399	57,4	1.853.991	16,5

Source: Calculated by the author based On data from EUROSTAT Population on 1 January by five-year age group, sex and urban-rural typology [urt_pjangrp3], and Labor market statistics by urban-rural typology [urt_edat_lfse4], Extracted on 04.02.2017

Was used Microsoft Excel to calculate χ2 test statistics and the critical value. The decision on acceptance the hypothesis H0 is such: If $\chi2_{calculat.} \leq \chi2_{crit.}$ (α; df), then accept the null hypothesis, else the null hypothesis is rejected.

3. RESULTS AND DISCUSSION

Table no 2 is a 3x3 contingency table refers to the educational attainment level of the population aged 25-64 classified as urban-rural typology, observed frequencies.

Table no. 2. - Population aged 25-64 by educational attainment level, and urban-rural typology (observed values)

Level of education / Urban/rural typology	Less than primary, primary and lower secondary education (levels 0-2)	Upper secondary and post-secondary non-tertiary education (levels 3 and 4)	Tertiary education (levels 5-8)	Row Total
Predominantly urban regions (O)	269.917	820.930	506.294	1.597.141
Intermediate regions (O)	878.866	2.219.699	657.271	3.755.836
Predominantly rural regions (O)	1.772.874	3.387.770	690.426	5.851.070
Colum TOTAL	2.921.657	6.428.399	1.853.991	11.204.047

Source: Calculated by the author based on data from EUROSTAT Population on 1 January by five-year age group, sex and urban-rural typology [urt_pjangrp3], Extracted on 04.02.2017

To calculate the expected frequencies, we assume independence of the rows and columns.

Table no. 3. - Population aged 25-64 by educational attainment level, and urban-rural typology (expected values)

Level of education / Urban/rural typology	Less than primary, primary and lower secondary education (levels 0-2)	Upper secondary and post-secondary non-tertiary education (levels 3 and 4)	Tertiary education (levels 5-8)	Row Total
Predominantly urban regions (E)	416483	916371	264287	1597141
Intermediate regions (E)	979402	2154937	621497	3755836
Predominantly rural regions (E)	1525772	3357092	968206	5851070
Colum TOTAL	2921657	6428400	1853990	11204047

Source: Calculated by the author using Excel

The calculated Chi-Square Statistic is 417444, as can see in table no. 4.

Table no. 4. – Algorithm for Calculate Chi-Square Statistic

Level of education / Urban/rural tipology	Less than primary, primary and lower secondary education (levels 0-2)	Upper secondary and post-secondary non-tertiary education (levels 3 and 4)	Tertiary education (levels 5-8)	Row Total
Predominantly urban regions $(O-E)^2/E$	51579	9940	221605	283124
Intermediate regions $(O-E)^2/E$	10320	1946	2059	14325
Predominantly rural regions $(O-E)^2/E$	40019	280	79696	119995
			$\chi2$ calculated =	**417.444**

Source: Calculated by the author using Excel

From Chi-square distribution table for *df = (3-1)*(3-1)=4*, and *α=0,050*, $\chi^2_{crit.} =$ 9.488, so $\chi2_{calculated} > \chi^2_{crit.,}$ so H0 are rejected. The differences between the three regional typologies of Romania on educational attainment categories by level are significant and not due to random sampling variation.

3. CONCLUSIONS

Reducing economic disparities in Romania territorial level requires a more careful approach to the quality of human resources. A highly skilled workforce is essential for a competitive and sustainable economy. The chi-square test confirms the relationship between the education level of the population and level of development of the region of residence, so the typology of the geographical regions influences the educational attainment level of the population. The fact that more than half of the population resides in rural areas makes the approach to education and training human resources from this area needed a special attention, especially if we consider that the family, living standards and the sociocultural influence factors are so important.

REFERENCES

Alpopi, C. (2013). Strategia de Dezvoltare Teritorială a României, Studii de fundamentare, Studiul 5 – Activități din sectorul secundar. Contract, (122/02.07) disponibil la http://sdtr.ro/upload/STUDII/23.%20Raport_Zone%20cu%20specific%20geografic_.pdf

Antonescu, D. (2013). Politica de dezvoltare regionala a României în etapa postaderare (No. 130516). National Institute of Economic Research, Romania.

Arpinte, D., Cace, S., Scoican, A.N. (2010) Social economy in Romania: two regional profiles. Bucharest, Editura Expert.

Bălășoiu, R., (2004). Influența mediului sociocultural de proveniență asupra reușitei școlare, Revista Academiei Forțelor terestre, 4 (36).

Cirnu, D. (2010). Particulars of regional developemment and specific causes. Annals-Economy Series, 3, 75-86.

Constantinescu, S., (2013). Economia socială și ocuparea forței de muncă Integrarea grupurilor vulnerabile pe piața muncii.

Dobrin, M., Tache, A., Petrișor A.I., (2010). Development disparities in the administrative-territorial units in Romania, Romanian Statistical Review, 5, 16-26.

Macovei, C. (2016). Economia socială și ocuparea forței de muncă. Integrarea grupurilor vulnerabile pe piața muncii, Revista de Economie Socială, 6(2), 161-166.

Neculai, C. (2011). Aspects of Quality of Life by Type of Regions in European Rural Area. Romania, 72(102.7), 1272-9.

Polgár, K. D., Duguleana, L. (2015). Importance of rural areas and the regional profiles of EU member states. Bulletin of the Transilvania University of Brasov. Economic Sciences. Series V, 8(2), 415.

Teșliuc, E., Grigoraș, V., Stănculescu, M., (2015) Studiu de fundamentare pentru Strategia națională privind incluziunea socială și reducerea sărăciei 2015-2020

Urban-rural Typology, European Commission. Eurostat, (19.02.2017). http://ec.europa.eu/eurostat/statistics-explained/index.php/Urban-rural_typology

INFORMATION MANAGEMENT AND ITS IMPACT ON THIS SUSTAINABLE DEVELOPMENT OF COMPANIES IN AGRICULTURE

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Abstract

The aim of this article is to show how we need information management to achieve sustainable development of a company. In today's knowledge based economy, organizations that can't properly utilize their information assets risk not being able to develop or even survive in the fast paced, competitive market.

After emphasizing the importance of this concept, the article will present a model that explains how information can be used and what impact it has on an organization: the Information Management Body of Knowledge, or IMBOK. An analysis of the model will be made , provided with examples for its practical use for companies in agriculture.

Keywords: information management, model, knowledge

1. INTRODUCTION

Information has become a valuable resource over the years and in today's knowledge based economy, organizations that can't properly make use of their knowledge assets risk not being able to more forward or even survive in the fast paced, competitive markets. After realizing the importance of information for a company, questions arise on how to properly create, develop and use this resource.

According to the Cambridge Business English Dictionary (http://dictionary.cambridge.org/dictionary/english/information-management) information management is "the process of collecting, organizing, storing and providing information within a company or organization"

The second question we will ask is how much added value does information brings to a company, especially in agriculture, which is a more traditional branch of economy? The aim of this paper is to answer these questions by analyzing an outcome of research in the information management field and show the importance of its use in practice.

2. THE INFORMATION MANAGEMENT PROCESS

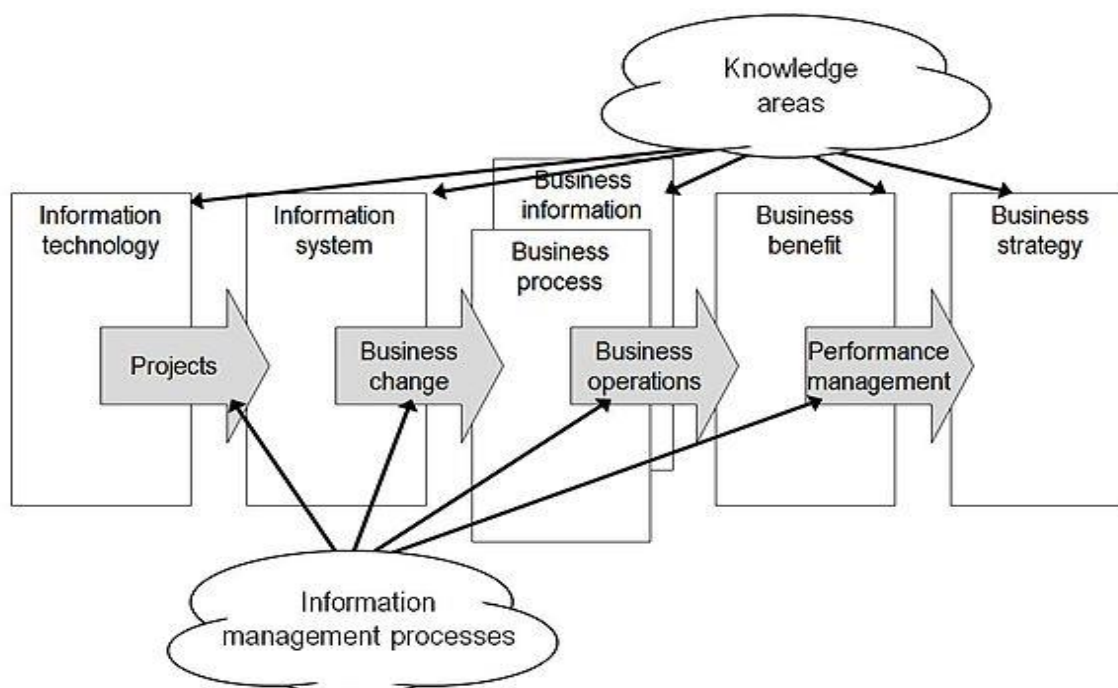Information management, as a field of science, has the following components:

•The processes used for bringing information into the business activity of a company

•The principles that provide information to the suitable actors, that will used it at a right time

•The perception of information as an asset that requires proper management

•The organizational and social context in which information is used;

It is a complex process that needs not only core management skills but technical ones as well as an experienced overview of the company's processes. In order to better understand this process and show what kind of connections are build in practice between all the actors involved(management, IT engineers, operational staff etc) the Information Management Body of Knowledge(IMBOK) was created .

The IMBOK is the result of a research project conducted at the University of the Western Cape in South Africa by Allen Lee and his team. Lee's framework explains what to consider when investing in information and what impact it will have on your organization. This could be an excellent tool for managers when dealing with decisions regarding information management issues.

The IMBOK model divides all the work needed into 6 main areas of management expertise and 4 processes that will emerge.

1. **Fig 1 IMBOK framework (**Bytheway, A., 2015. Investing in Information: the Information Management Body of Knowledge, pg 26, Geneva: Springer)

- **Information technology**, as a resource   will be   incorporated   in **Information systems** by making **Projects** which will bring together   the necessary technology and systems in order to deliver the required upgrade;

- The information systems, once in place will bring **Business change** in all the **Business processes** and will generate   **Business Information** which will improve the overall functionality of the business system;

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- The information systems, once in place will bring **Business change** in all the **Business processes** and will generate   **Business Information** which will improve the overall functionality of the business system;

- After   the business system is enhanced , the **Business operations** will ensure the expected **Business Benefits** ;
- The benefits, trough an efficient **Performance management** should be aligned with the overall **Business Strategy;**

EXAMPLE:

In order to see how the IMBOK can help your company we will take as example an organization from de food processing industry: a dairy products company. This company buys milk from farms and process it in order to create products as packaged milk, yogurt and so on. The products are afterwards sold to supermarkets, schools and local shops.

The company wants to buy a warehouse management software to have a better control over inventory. Before making the investment in technology, the management needs a tool to analyze how this decision will impact the company processes, personnel and exactly what added value this will bring. We will use IMBOK framework, dividing the management expertise areas, as follows:

The information technology will be the new software. In charge with this expertise will be the IT department, that has the proper knowledge to do so, trough a Project they will deliver.

❖   **The information technology** will be the new software. In charge with this expertise will be the IT department, that has the proper knowledge to do so, trough a **Project** they will deliver.

❖   **The information system** resulted from the project will include the software and all the resources needed to run the program(hardware, people, data). After this system will be working, it will generate a **change** in the business system.

❖   **The business processes** affected will be all those that have a direct or indirect connection with inventory(the supply, the distribution to costumers, manufacturing and others). This will generate data, that will become new **business information** after it will be taken into consideration(quantities sold, moved, prices, customer and employees feedback). It is important to keep an overview of the possible information the management will receive in order to identify possible treats and opportunities. For example, employees need more computer skills and might find it difficult to adapt. This area will come to the expertise of operational management.

❖   Running the **business operations** within the new structure created will bring the company expected **benefits** such as decreasing the number of damaged inventory, or faster delivery to customers, a better overview of the inventory quality and quantity.

❖   The benefits need to be carefully understood and integrated into the overall **business strategy**, after they will be monitored trough **performance management**.

❖   The entire workflow of information, if it is correctly passed trough will help the decision makers understand if the investment is feasible. At this moment they have a global overview and they can make the decision.

2.1 OVERVIEW OF THE IMBOK FRAMEWORK:

After seeing the general rules and the example, we will make an overview revealing the strengths, opportunities and treats that IMBOK has, from this papers point of view.

Strengths:

-The model enables management and other users with a tool to detect flaws or opportunities and to easily transfer the information from one domain to another(from technical support to business processes and company strategy)

-Decision makers will be able to make better calls regarding information management

-Investment in information technology will be easier to asses and to integrate in the company's overall strategy

-Information management will be regarded as a complex and vital internal process and deled with in appropriate manner

-The general process of information management will be improved

- A strong management of information will make the company more efficient and oriented towards innovation, which will be a powerful competitive advantage

-The business process will be improved as the flow of information will be more efficient

-The company will be able to create positive organizational change and adapt better to the external and internal conditions;

Treats:

-The model only applies to large companies, for a small ones it is not usable, as the knowledge areas are too complex for one person, especially in traditional agriculture . However, the overall workflow and principles could be adapted to a small company.

-The framework is very sensitive to communication flaws within the organization. If this happens, the IMBOK will be really hard to use, as transfer of information from one expertise area to another will be hard to achieve. It is vital that a company trying to use this framework will ensure that the communication between all its systems is flawless.

-The IMBOK is affected also by the reluctance to change that some organizations might face or the inability of managers of fully estimating the non-material benefits of investing in   information. That is why it is crucial that   a company will have full competency within the six knowledge areas.

-In traditional agriculture, where innovation and flexibility is low is very low, applying this model would be a challenge. However, companies that manage to be more open towards technology will have a real competitive advantage, given the nature of the market and they will develop sustainable in time.

3. CONCLUSIONS

Information   management has become an important component of every company's strategy .Although it is complex process, sometimes hard to understand fully due to the

variety of expertise needed in order to have a proper overview, research has come up with tool to help manage information better.

IMBOK is such a tool, although not perfect and usable in all situations, it will help people struggling to enhance their relation with technology in most cases. It is a common solution to common problem. In traditional agriculture, where innovation and flexibility is low is very low, applying this model would be a challenge. However, companies that manage to be more open towards technology will have a real competitive advantage, given the nature of the market and they will develop sustainable in time.

REFERENCES

Bytheway, A., (2015). *Investing in Information: the Information Management Body of Knowledge*, Geneva: Springer

Ward, J. & Peppard, J., (2002). *Strategic Planning for Information Systems (3rd Edition)*, Chichester: Wiley

Wigand, Rolf T., Picot, Arnold and Reichwald, Ralf (1997). *Information, Organization and Management: Expanding Markets and Corporate Boundaries*, Wiley & Sons

http://dictionary.cambridge.org/dictionary/english/information-management

HOLISTIC INDICATOR FOR OPTIMIZING FOREST GOVERNANCE

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Abstract

Forests are crucial for mankind, but to fulfill sustainably and equitable all demands forest governance must addapt to ever emerging needs and values the society holds. Here an indicator is porposed for the optimization of forest governance to ever changing social needs and development. It is based on an innovative mathematical theory, named holistic-integrative field theory, developed for this purpose. This theory uses linear algebra, statistics and discrete analysis, in order to integrate all forest outputs, perceived as important by at least one actor, into an indicator. Problems raised by the heterogeneity of the outputs are solved by considering the outputs as vectors with an unknown number of dimensions but with known modules (lengths). Statistical methods and discrete analysis methods are used to compute a resultant vector which represents the optimization criterion. The indicator is to be used in an itterative manner and some fractal and cybernetic principles are embedded in its logic and algorithms. The criterion measures the effects of change on forest outputs and can be used as a feedback to improve forest governance. The indicator can integrate any available data. The holistic-integrative indicator has the potential to improve forests-society-science-policy-practice interface and to operationalize the concepts of natural capital and ecosystem services as well as to provide the means for a more sustainable, efficient and integrated usage of ecosystemsIn the end of the chapter an example is provided.

Keywords: *optimal forest governance, equitability, inclusive forest policy, public acceptance, natural capital, forests-society-science-policy-practice interface, bioeconomy*

1. INTRODUCTION

Bioeconomy is a new and dynamic concept. Because of this novelty the deciders tend to consider, in decision processes, only the outputs of the forest ecosystems with monetary or market value, as in neoliberal economics (Dimitrov, 2005), omitting other benefits of equal or potentially higher importance. For instance the palm-oil industry seems to be a man-made natural disaster done in the name of bio-industries (Knudson, 2009).

For a sustainable forest-based bioeconomy, the governance must be a holistic, inclusive and democratic process. It must include all actors and be adaptable at any level such as global, continental, regional, national and local; simultaneously. Previous studies identified that two very important actors, namely the local communityes and the general public, are othen playing a minor role in decision process (Mustalahti, 2015).

A new approach is presented here to ensure that forest governance – which appeared in a timber-crisis and is constructed mostly for controlling the system, not for optimiying the outputs – adapts itself to social changes and avoids manipulation by power-

networks operating independently of the interest of the general public, (Korvela, (in Finnish) 2012 cited by Mustalahti, 2015).

2. METHOD

Different governace systems are leading to different forest structures and therefore to different preceived outputs. The outputs can be very heterogenous and not directlly integrable into an indicator, but the outputs are usually interconnected. Because of this complexity two main challenges emerged namely: i) to design a flexible enough structure of the indicator so it can addapt to any situation; ii) to integrate non-homogenous data using a coherent metric.

The first challenge (i) was tackled by adopting a modular pattern for the indicator which is repeating at distinct levels. The logical scheme of such a module is presented bellow (fig. no. 1).
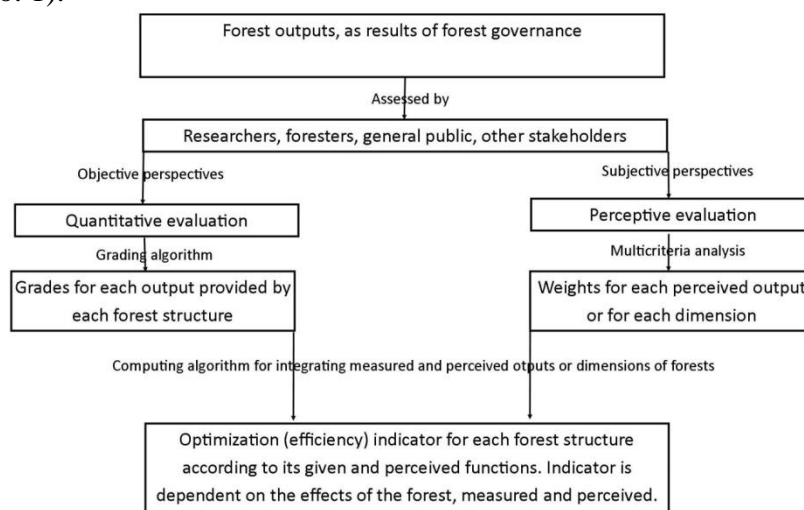
Fig. no. 1. The logical scheme of one module of the indicator

The second challenge (ii), given by non-homogenous data, was surpassed by considering each output as a vector with a length equal with the estimated value of that output. Therefore, the efficiency of the forest is given by the resultant of all considered vectors as shown in fig. no. 2 bellow.
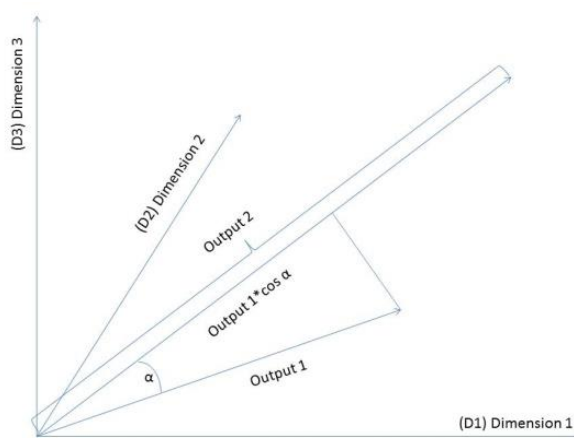
Figure 2 Forests outputs, expressed as vectors, can be distinct and not linearly independent.

Since the orientation of the vectors is not known, the angle between vectors can be substituted by the correlation coefficient between the modules of the vectors.

I named this method of computing the length of the resultant output "holistic-integrative field theory", because it integrates statistical methods with linear algebra and allows to integrate any new perceived output. Therefore, the method has the potential to holistically integrate all outputs so a length of the resultant vector can be computed without knowing all the dimensions of the hyperspace.

3. CONCLUSIONS

The holistic-integrative indicator presented completes the existing methodology to assess forest governance (FAO 2011). It is providing an innovative way to foster better forest policies being both democratic and social-inclusive.

The mathematical apparatus used for the indicator, based on the holistic-integrative field theory, is highly flexible and general and has the potential to steer forest governance according to the whole social input. In further research is expected that the method will contribute significantly to operationalize the natural capital concept and to improve the science-policy interface.

REFERENCES

Dimitrov, R., (2005). Hostage to Norms: States, Institutions and Global Forest Politics. In Global Environmental Politics 5 (4), pp. 1–24,

FAO, Framework for assessing and Monitoring Forest Governance, (2011). Available from: http://www.fao.org/docrep/014/i2227e/i2227e00.pdf,

Mustalahti Irmeli, (2015). Towards a Sustainable Bioeconomy, Innovative Methods and Solutions for the Agriculture and Forest Sectors. oral presentation. Barcelona

TOWARD A CIRCULAR ECONOMY: THE ROLE OF INFORMATION AND INNOVATION

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Abstract

The prevalling pattern of generation of goods and services doesn´t take into account the limitations of natural resources and the production and generation of discharges along the production chain. This current economic model serious consequences that cause the deterioration of living conditions in different ways for the world's population, thus establishing the current ecological crisis. In a reality of increasingly limited natural resources and the search for alternatives for industrial production arises the concept of circular economy, a proposal that aims to maximize the sustainable use of natural resources seeking to eliminate waste and organize economic activities considering a continuous process of refeeding. In this context, analyze and better understand the importance of information and the process of generation and adoption of innovations for a transition to a circular economy is a necessary condition. The discussions underline the need of integrating these axes of the literature, considering the huge importance of then in the transition to a circular economy. To summarize, this paper aims to: (i) present the circular economy as a new standard that have the objective of tackled the ecological crisis; (ii) clarify that information and innovation have a crucial role in this transition to a circular economy.

1. INTRODUCTION

The importance of information and knowledge in the contemporary world is felt in different dimensions, being a source of innovation and competitiveness for organizations, regions and countries. One of the prominent features of contemporary society is the importance attached to innovation, in which innovative organizations are considered to be those able to develop and adopt new products, processes and projects (Zattar and Issberner, 2011).

The prevalling pattern of generation of goods and services does not take into account the limitations of natural resources and the production and generation of discharges along the production chain. The current economic model based on production and consumption brought consequences as global warming and the increasing depletion of

biodiversity, among many other serious problems that cause the deterioration of living conditions in different ways for the world's population.

According to Léna (2012), while the limits for the physical expansion of the economic system and the degradation generated were not noticeable, however there were crises, the belief that the system would provide needed for the growing consumption remained unshaken. This belief was deteriorating from obvious signs of depletion of a large amount of natural resources, which tends to destabilize the operation of the current production system (Wagner and others, 2002).

In the last fifty years, ecological movements have spread in many countries. The growing concern about the ecological crisis gave rise in 1987 to the proposal of sustainable development, the pursuit of environmental sustainability is the need for companies to adopt innovative ways to produce with regard to the use, processing and disposal of natural resources. In this context, eco-innovation concept can contribute to the transition towards a more environmentally conscious and committed society.

Kemp and Pontoglio(2007) define eco-innovation as the production or exploitation of a product, production process, service or business management method that is new to the company or end user and results through its life, in a reduction of environmental risk, pollution and other negative impacts on the use of natural resources.

Analyze and better understand the process of generation and adoption of innovations for a sustainable life on the planet is a necessary condition to face this ecological crisis and is in this context that a review of industry practices becomes an important element to reveal the areas where eco-innovative effort can focus. From this perspective, the goods and services should be developed, manufactured and supplied considering such provisions.

The environmental issue is relevant to any discussion on the future of the industry (Young, 2011). It is in the context of increasingly limited natural resources and the search for alternatives for industrial production that arises the concept of circular economy. The circular economy is a proposal whose basic concepts were presented by Boulding (1966) and received theoretical basis of the concept of industrial ecology. The circular economy aims to maximize the sustainable use of natural resources seeking to eliminate waste and organize economic activities considering a continuous process of refeeding (resource-production-regenerative resources).

Given this relatively recent picture that confronts models and standards consolidated in the forms of production and consumption, many issues can be identified and it is worth asking: What is the role of information and innovation (eco-innovation) in this transition? The present article will bring through a bibliographical research these answers, showing the importance of the participation of both information and eco-innovation.

2. CIRCULAR ECONOMY

The circular economy can be seen as an alternative to the current and prevalent approach in which resources are used for a specific purpose and then discarded (linear economy). It is a concept that inspires innovation to create a new circular production system, where the concept of 'waste' is relativized because almost everything can be input

for a new production cycle. The concept is inspired by biological cycles, emphasizing the importance of optimizing the use of natural resources in a system over time (Di Maio and Rem, 2015;. ELLEN MACARTHUR FOUNDATION 2013th, 2013b, 2014). It may be pointed out as an economy that aims to balance economic development with the preservation of natural resources.

Circular economy is not just a mark in environmental policy circles. It is one of the main strategies used by the European Union (EU) to stimulate sustainable economic growth and job creation, as illustrated by the European Commission's Work Program for 2016. During the last three years, circular economy was one of the most Discussed in the EU, considering the end of the 2014 proposal and the preparation of the new Circular Economy package by the European Commission.

The ecological crisis requires initiatives such as the circular economy in order to tackle them. However, even considering that innovation alone is not able to meet all the proposals related to the circular economy, it is an essential part of the confrontation of this ecological crisis and agent of paramount importance in the transition to a circular economy. In this sense, the so-called eco-innovations present promising prospects, since they are innovations that contribute to the reduction of the impacts generated by the productive means, as well as propose the use of natural resources in a more eco-efficient way. The information assumes a central role in this eco-innovative process. For this reason both will be detailed in the next sections, in the search to clarify their central roles in this transition to the circular economy.

2.1. Information and Circular Economy

Taking into account the context presented, the notion of information regime contributes to identify the characteristics and dynamics of the new "order" represented by the circular economy since its implementation requires the interweaving of new relations and agencies. The concept of information regime can be seen as an important tool for analyzing the relations between a plurality of actors, media and information effects.

An information regime affects and is affected by certain cultural, political and economic possibilities and conditions, which are expressed and constituted in it. It can be said that each new configuration of an information system results and conditions different modes of configuration of a sociocultural and political order (González de Gómez, 2003; González de Gómez, 2012; Bezerra and others, 2016).

Different authors have used the term information regime as one of the interpretative resources to address the relations between politics, information and power. The complexity of this new economy, society and culture in training must be analyzed from the information and communication technology revolution, due to the "penetrability in all spheres of human activity," warning that "we must locate this process of revolutionary technological transformation in the social context in which it occurs and by which it is being shaped" (González de Gómez, 2012; Castells, 1999). Consistently, information exchange is cited as a constraint to the success of CE initiatives (Winans and others, 2016).

From these premises, we can affirm that each new configuration of a information regime results from and conditions different modes of configuration of a socio-cultural and political order, a necessary reality for the transition to the circular economy to take place.

2.2. Innovation (eco-innovation) and Circular Economy

Eco-innovation is attracting increasing interest among firms, governments and scholars as a means of achieving a higher degree of sustainable development (Tamayo-Orbegozo and others, 2016). Eco-innovations are the production, application or exploitation of a good, service, production process, organizational structure, or management or business method that is new to the company or user and which results throughout their entire life cycle (including energy use) compared to other relevant alternatives (Kemp and Pearson, 2008).

The transition to the circular economy depends on catalysing investments and innovations giving rise to new economic opportunities. On the other hand, regulatory and market pressures are forcing companies to learn more about the environmental impacts and to act to reduce them. Appropriate policy instruments contribute to the success of and to the innovation and network synergies that help stakeholders to meet the multiple objectives or environmental, economic, societal/managerial, and topological challenges of CE-related initiatives (Winans and others, 2016). Such factors reinforce and contribute to the emergence and improvement of proposals related to eco-innovation (Horbach and others, 2012; Kemp, 2000; Motta, 2013).

These pressures are necessary for the transition to a circular economy, since they will change social and environmental values, generating opportunities that will be captured through innovations, in this case eco-innovations (Runnel, 2013; Jaffe and Palmer, 1997; Schaltegger and Synnestvedt, 2002).

3. CONCLUSIONS

This paper starts addressing the circular economy and the need to find a proper way to deal with it. With regard to this needed transition, information and innovation are necessary to forward this new order. This relationship between Circular Economy, information and innovation was investigated by a review of the recent literature.

The Circular Economy concept has influenced policy and innovation in some of the world's largest economies, it emerges in the literature mainly focusing in three goals: reduction, reuse and recycle. But in order to achieve these goals, information and innovation are necessary, in this case specifically eco-innovation.

Interesting and appropriate definitions were found in the literature, concerning Circular Economy, information and eco-innovation. Informtation and eco-innovation were investigated and discussed in the paper showing evidences of the existence of links among them and the Circular Economy.

The discussion undertaken here intended to contribute to the debates about the transition to a Ciruclar Economy. According to the study, information and eco-innovation can jointly collaborate with this transition, facing the high consumption of natural resources and the generation of environmental impacts.

It is expected that this work can clarify the importance of information and motivate practical applications of eco-innovations, leading to a new economy pattern, the Circular Economy. It is also expected that future case studies could be developed to further contribute to this understanding.

REFERENCES

Bezerra, E.P.; Silva, Z.C.G.; Guimar, I.J.B.; Souza, E.D. (2016). Regime de informação: abordagens conceituais e aplicações práticas. Revista em questão, Porto Alegre, v.22, p. 60-86, mai/ago.

Boulding, K. E. (1966). The economics of the coming Spaceship Earth. Environmental Quality in a Growing Economy: Essays from the Sixth RFF Forum. H. Jarrett. Baltimore, John Hopkins University Press: 3-14.

Castells, M. (1999). A sociedade em rede. São Paulo: Paz e Terra.

Di Maio, F.; Rem, P.C. (2015). A Robust Indicator for Promoting Circular Economy through Recycling. Journal of Environmental Protection, 6, 1095-1104.

Ellen MacArthur Foundation. 2013a. Towards the Circular Economy. Economic and business rationale for an accelerated transition, Volume 1, Cowes.

Ellen MacArthur Foundation. (2013b).   Towards the Circular Economy. Opportunities for the consumer goods sector, Volume 2, Cowes.

Ellen MacArthur Foundation. 2014. Towards the Circular Economy. Accelerating the scaleup across global supply chains, Volume 3, Cowe,

González De Gómez, M. N. (2003). Escopo e abrangência da Ciência da Informação e a Pós-Graduação na área: anotações para uma reflexão. Transinformação, Campinas, v. 15, n. 1, p. 31-43,

González De Gómez, M. N. (2012). Regime de informação: construção de um conceito. Informação & sociedade: estudos, João Pessoa, v. 22, n. 3, p.43-60.

Horbach, J.; Rammer, C.; Rennings, K. (2012). Determinants of Eco-innovation by type of environmenta impact – the role of regulatory push/pull, technology push and market pull, Ecological Economics 78/2012, 112-122.

Jaffe, A.B.; Palmer, K. (1997). Environmental Regulation and Innovation: a panel data study. The Review of Economics and Statistics, vol. 79, no.4, Nov.

Kemp, R. (2000). Technology effects of environmental policy – an overview of the effects of past policies and suggestions for improvement. In Innovation and the Environment- Sustainable Development, OECD.

Kemp, R.; Pearson, P. (2008). Final Report MEI project about measuring ecoinnovation, Maastricht.

Léna, P. (2012). Os Limites do crescimento econômico e a busca pela sustentabilidade: uma introdução ao debate. In Enfrentando Os Limites Do Crescimento: Sustentabilidade, Decrescimento e Prosperidade. (1a ed.). Rio de Janeiro: Garamond.

Motta, W.H. (2013). Análise do Ciclo de Vida e Logística Reversa. Artigo apresentado no X Simpósio em Excelência em Gestão e Tecnologia – Seget.

Runnel, A. (2013). Supporting Eco-innovations Towards Creating Environmental Neutral Material Flows inEstonian Textile and Apparel Industry. Master Thesis applied for master´s degree of business administration in the field of entrepreneurship and technology management. Faculty if Economics and Business Administration Chair of Internatonal Business and Innovation: Tartu.

Schaltegger, S.; Synnestvedt, T. (2002). The Link between green and economic success: environmental management as the crucial trigger between environmental and economic performance. Journal of Environmental Management, no 65, pp. 339-346.

Tamayo-Orbegozo, U.; Maria-Azucena, V-M.,Villarreal-Larrinaga, O. (2016). Eco-innovation strategic model: a multiple-case study from a highly eco-innovative Europe region. Journal of Cleaner Production 142 (2017) 1347-1367.

Wagner, L.; Sullivan, D.; Sznopek, J. (2002). Economic drivers of mineral supply. U.S. Geological Survey Open-File Report 02-335. Washington DC.

Winans, K.; Kendall, A.; Deng, H. (2016). The history and current applications of the circular economy concept. Renewable and Sustainable Energy Reviews 68 (2017) 825-833.

Young, C. E. F. (2011). Potencial de crescimento da economia verde no Brasil. Política Ambiental: economia Verde: desafios e Oportunidades, n.8, p.90-9.

Zattar, M.; Issberner, L.R. (2011). Informação, conhecimento e aprendizagem na inovação aberta. XII Enanib, Brasília – DF.

SYNERGIES BETWEEN BUILDING INFORMATION MODELING AND GREEN IN THE CONSTRUCTION INDUSTRY – A SYSTEMATIC LITERATURE REVIEW

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Abstract

The purpose of this paper is to critically review the synergisms between BIM and Green to achieve sustainable development in construction industry. The investigation is conducted by the methodology of systematic literature review (SLR) to finding synergisms between concepts, practices and metrics to sustainability. This work examine the compatibility of the green and BIM and Six Sigma and its applications. The study has three major contributions. First, this paper investigates the integration between green and BIM in new avenue exploration to sustainable construction. Second, it supports and expands current literature, providing both academicians and practitioners a better panorama to understand the present status of proposed framework for achieving sustainability in construction industry.

Keywords: *BIM, Sustainable development, Construction Industry.*

Classification JEL: *L74, O14, Q01, Q55*

1. INTRODUCTION

Over the last decades, sustainable concerns have increasingly gained importance in practice and academic discussions. In this context, building information modeling (BIM) based technologies are regarded as a potentially useful vehicle for helping project stakeholders to make the best use of the available design data for sustainable design and sustainability rating analysis in order to improve energy efficiency and to reduce energy consumption over a building's entire lifecycle, and have prompted efforts to integrate green and sustainable building initiatives into the conventional building design, construction and operation processes (Wong and Kuan, 2014).

Academics, practitioners and policymakers have extensively cited the benefits of BIM implementation to AEC (architecture, engineering and construction) in parallel to the drive for green and sustainable building construction. Thus, the purpose of this paper is to critically review the synergisms between BIM and Green and highlight its importance to achieve sustainable development in the construction industry. To do this, a systematic literature review (SLR) of the subjects under investigation was conducted. This review

explores the following question: How does the interaction between green and BIM can contribute to sustainable development in the construction industry?

2. METHODOLOGY

In this paper was conducted a SLR in order to locate relevant existing studies based on prior formulated research questions, to evaluate and synthesize their respective contributions. This SLR consists of five consecutive phases: (1) formulation of the question, (2) location of studies, (3) evaluation and selection of studies, (4) analysis and synthesis, and (5) reporting and use of the results (Garza-Reyes, 2015).

Identifying the keywords is extremely critical to a comprehensive and unbiased review. The search is limited to a set of key words ('BIM', 'Building Information Modeling', 'Environment', 'Sustainable', 'Sustainability', 'green', 'green BIM' and 'Construction'). We searched these keywords in the following databases: Scopus, Emerald, Science Direct and Compendex.The conducted research had combined the search terms into title, abstract or keywords, limited to papers published in peer-reviewed journals up to March 2017, when they were available. Additional papers were identified by reading the papers included in the review. 668 records were identified through databases searching. Then, they were refined by titles/abstracts sreening analysis and 563 records were excluded. Following that, 105 articles were analized in depth in an interative process. Based on the full text analysis, a total of 62 articles complied with the selection criteria for bibliometric analisys.

3. SYNERGIES BETWEEN BIM AND GREEN

Alwan and others (2015) verified the viability of using information flow processes of a BIM model to speed up environmental assessment in terms of Leadership in Energy and Environmental Design (LEED) certification through a case study of a competition in which participant teams should rapidly evaluate the sustainability of a certain building.

Amado and Poggi (2014) verify the energy balance of a city and they propose a model, which is integrated with Geographical Information System (GIS) and is developed to support urban planning in terms of solar energy. Azhar and others (2011) created a conceptual framework relating the various LEED credits and sustainability analysis conducted within BIM environments.

Inyim et al. (2014) evaluated and optimized a construction project through development of a system based on three criteria collectively: time, cost and environmental impact (CO_2 emissions). Jrade and Jalaei (2013) conduct Life Cycle Analysis (LCA) by exporting Bills of Materials (BOMs) to identify the effects of component selection on indicators and analyzing the cost of using green materials in the design process in a case study.

Li and others (2012) explored a computational model to calculate carbon emissions during the life cycle of a building with the support of functionalities allowed by BIM methodology that aims to fulfill a gap in tools to estimate CO_2 during construction phase. Oti and Tizani (2015) created a modeling framework by developing a BIM based plugin to support the decision making process, incorporating Life Cycle Costs (LCC), carbon

footprint and ecological footprint (economic and environmental pillars of sustainability) indicators. Motawa and Carter (2013) developed an initial ontology required for energetic assessments of edifications, including climate data, construction specification, site details and energy assessment.

3. BIBLIOMETRIC RESULTS OF SYNERGIES

The Figures 1, 2, 3 and 4 indicates the bibliometric results of the synergies between BIM and Green in order to achive sustainable development in construction industry.
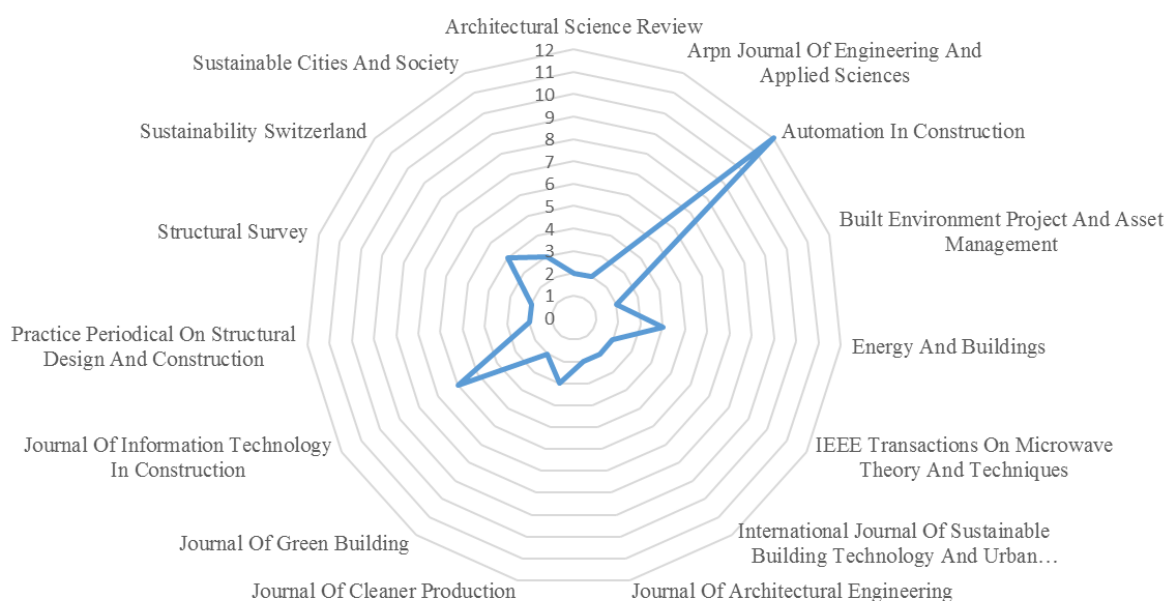
Figure 1. BIM-green journals from the literature
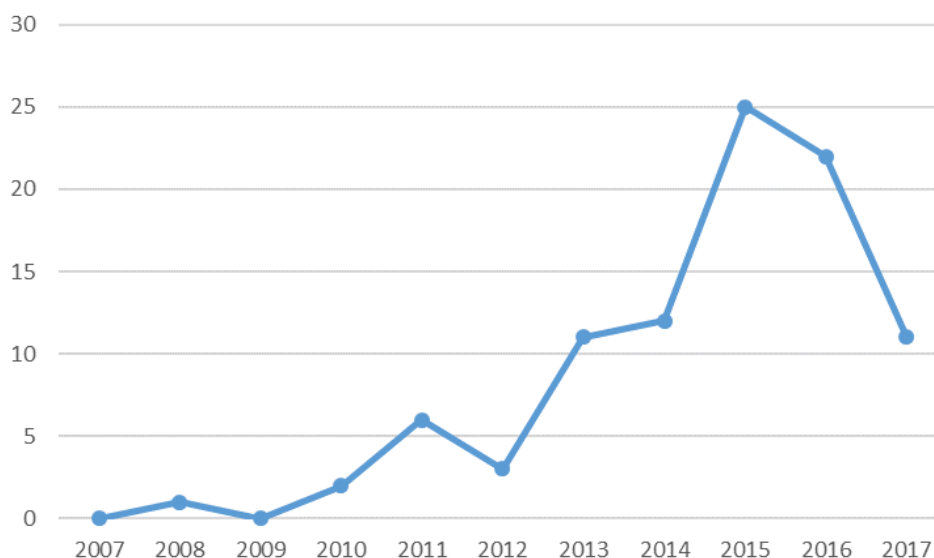
Figure 2. BIM-green publications by year from the literature
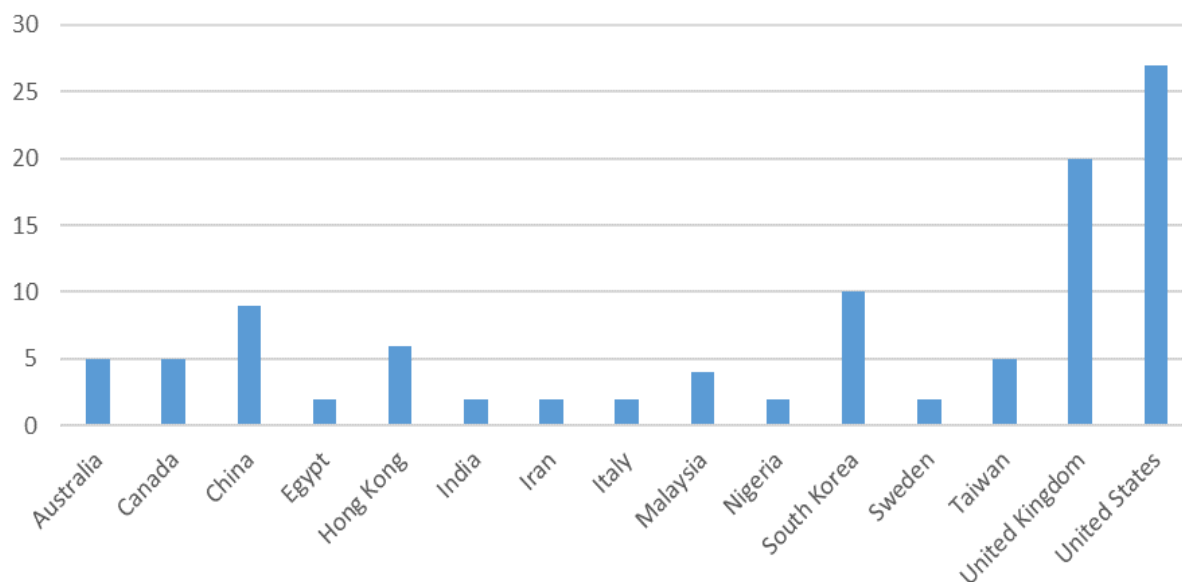
Figure 3. BIM-green countries from the literature
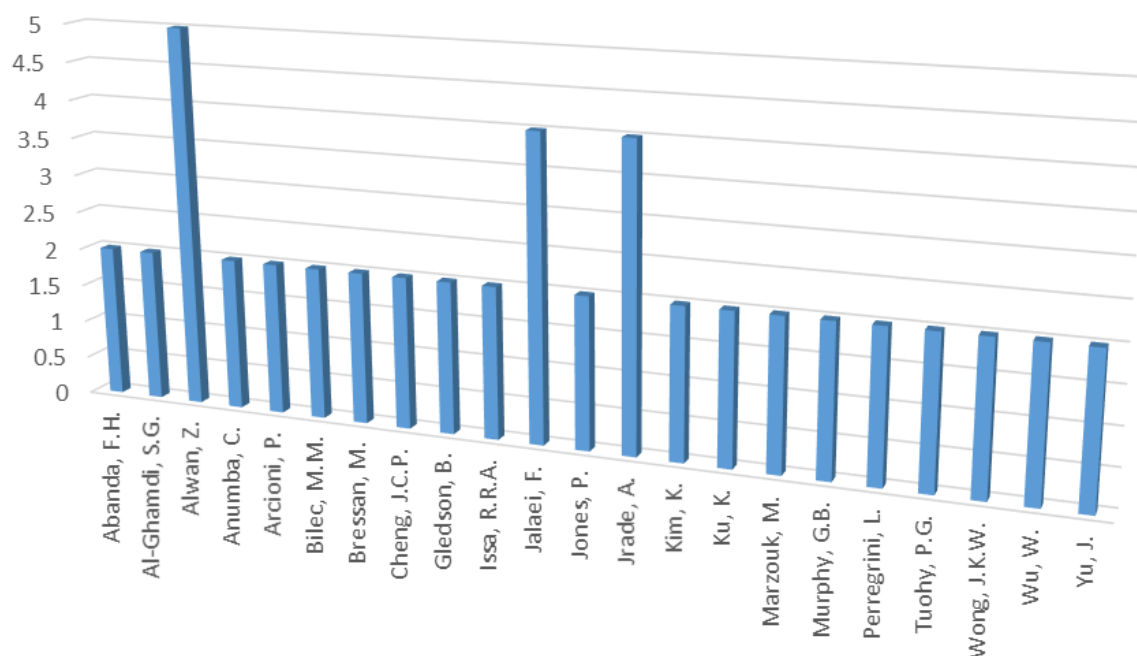
Figure 4. BIM-green authors from the literature

The results demonstrated increase publications of BIM and Green in the last 5 years, as well as Automation in Construction is the most frequently journal, US and UK had more papers published and the author Alwan have more publications in this area.

4. CONCLUSIONS

Therefore, different aspects of BIM and green paradigms have been studied and sustainability is one of the strategic imperatives for construction projects, which must be aligned to their traditional priorities of profitability and efficiency. This paper offered a systematic review of the existing literature that relates BIM and green, in order to provide guidance on the topic for scholars and to contribute with the definition of clear paths for further research. Besides that, this study also aims at providing industrialists with a general overview of green BIM so they can develop a deeper and richer knowledge on these paradigms, and their practices, to help them formulate more effective strategies for their implementation. This research will also motivate them, and hence their organizations, to operate sustainably.

REFERENCES

Alwan, Z., Greenwood, D., Gledson, B. (2015). Rapid LEED evaluation performed with BIM based sustainability analysis on a virtual construction project. Construction Innovation, Volume 15, pp. 134-150,

Amado, M., Poggi, F. (2014). Solar Urban Planning: A Parametric Approach. Energy Procedia, Volume 48, pp. 1539-1548.

Azhar, S., Carlton, W. A., Olsen, D. & Ahmad, I., (2011). Building information modeling for sustainable design and LEED ® rating analysis. Automation in Construction, mar, Volume 20, pp. 217-224.

Garza-Reyes, J.A. (2015). Green lean and the need for Six Sigma. Int. J. Lean Six Sigma 6, 226–248, doi:10.1108/IJLSS-04-2014-0010

Inyim, P., Rivera, J., Zhu, Y. (2014). Integration of building information modeling and economic and environmental impact analysis to support sustainable building design. Journal of Management in Engineering, jan.Volume 31,

Jrade, A., Jalaei, F., (2013). Integrating building information modelling with sustainability to design building projects at the conceptual stage. Building Simulation, Volume 6, pp. 429-444,

Li, B., Fu, F. F., (2012). Zhong, H., Luo, H. B. Research on the computational model for carbon emissions in building construction stage based on BIM. Structural Survey, nov, Volume 30, pp. 411-425,

Motawa, I., Carter, K. (2013). Sustainable BIM-based Evaluation of Buildings. Procedia - Social and Behavioral Sciences, Volume 74, pp. 419-428.

Oti, A. H., Tizani, W. (2015). BIM extension for the sustainability appraisal of conceptual steel design. Advanced Engineering Informatics, Volume 29, pp. 28-46,

Wong, J. K.-W., Kuan, K.-L. (2014). Implementing 'BEAM Plus' for BIM-based sustainability analysis. Automation in Construction, Volume 44, pp. 163-175.

COMPARATIVE ALGORITHMS FOR THE BLACK-SCHOLES OPTION PRICING MODEL

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Abstract

This paper aims at numerically solving the Black-Scholes economic models using various algorithms based on difference schemes. These schemes are applied for discretizing spatial derivatives and the classical fourth-order Runge-Kutta method for time variation. The results revealed that the suggested schemes are seen to be capable of accurately solving the equation and numerically modelling it. The validity of the numerical algorithms has been verified through the produced results.

Keywords: *Black-Scholes option pricing model, Finite difference schemes, Economical modelling*

Classification JEL: C21,C41, C60

1. INTRODUCTION

Most phenomena in various fields of science can be described by differential equations. To obtain information about the physical system represented by partial differential equations (PDEs) having great importance in option valuation, the exact and approximate solutions of these equations need to be given with physical context.

The Black-Scholes PDE modelling option pricing to find the theoretical price $f(S,t)$ of a derivative security depending on the price *S* of one underlying asset at time *t*. The equation stemmed from a stochastic differential equation that models the dynamics of underlying asset price

$$f_t + \frac{1}{2}\sigma^2 S^2 f_{SS} + rSf_S - rf = 0 \tag{1}$$

where r and σ stand for risk-free interest rate and asset price volatility, respectively. The intricacy of the PDEs that describe the option pricing model makes numerical calculations have a fundamental role in research, and it is this intricacy that has led to setting up of numerical techniques that are suitable for a correct simulation of option pricing. Many researchers have paid their attention to produce either analytical or numerical solutions of the equation for various assumptions [1-7]. In the current paper, accurate solutions of the American option pricing model equation are obtained by using two different high-order methods based on difference schemes [8-10], a fourth-order Runge-Kutta (RK4) schemes in space and time, respectively.

The importance of this equation is that it can be possible to generate a perfect hedging situation through combining options contracts and the underlying security under the contracts being priced correctly. Under the initial condition

$$f(S,T) = \max(S - E, 0) \ , \ S > 0$$

and the boundary conditions,

$$f(0,t) = 0 , \quad f(S,t) = S - Ee^{[-r(T-t)]} \text{ as } S \to \infty .$$

Method 1:
A uniform one-dimensional mesh is considered, consisting of N points: $x_1, x_2, \ldots, x_{i-1}, x_i, x_{i+1}, x_N$ with the mesh size $\Delta S = h = x_{i+1} - x_i$. The first-order derivatives of the unknown function can be given at interior nodes, f', $i = 3, 4, \ldots, N-2$

$$f' = (f_{i-2} - 8f_{i-1} + 8f_{i+1} - f_{i+2})/(12h) \tag{2}$$

and at boundary or near boundary nodes $i = 1, 2, N-1, N$

$$f' = (-25f_i + 48f_{i+1} - 36f_{i+2} + 16f_{i+3} - 3f_{i+4})/(12h) \tag{3}$$

$$f' = (-3f_{i-1} - 10f_i + 18f_{i+1} - 6f_{i+2} + f_{i+3})/(12h) \tag{4}$$

$$f' = (-f_{i-3} + 6f_{i-2} - 18f_{i-1} + 10f_i + 3f_{i+1})/(12h) \tag{5}$$

$$f' = (3f_{i-4} - 16f_{i-3} + 36f_{i-2} - 48f_{i-1} + 25f_i)/(12h) \tag{6}$$

Note that the second-order derivative terms are obtained by applying the first order operator twice.

Method 2:
Here a combination of a fourth-order predictor method and a fourth-order corrector method has been considered to compare the produced results in Method 1.

2. RESULTS AND DISCUSSION

The current work has proposed two methods in investigating numerical behaviour of the American call option pricing model. The call option model has been considered for

the parameters $r = 0.2$, $S = 30$, $E = 20$, $T = 1$, $\sigma = 0.25$, $\Delta t = 0.02$ and $h = 0.04$. Note that Δt and h are time and spatial increments, respectively. With the use of Method 1 and Method 2, the computed solutions of the required function f are found to be 14.090 and 14.080, respectively. It is seen from those illustrative results that very good agreement between the two methods are obtained. For further research, special attention can be paid on the investigation of high-order splitting difference schemes in computational economical model problems by overcoming numerical difficulties.

REFERENCES

Cox, C. and Ross, S. A., (1976). "The Valuation of Options for Alternative Stochastic Process", Journal of Financial Economics, 145-166.

Heston, S. L, (1993). "A Closed-Form solutions for Options with Stochastic Volatility with Applications to Bond and Currency Options", The Review of Financial Studies, 6: 327-343.

Kemma, A. and Vorst, A., (1990). "A Pricing Method for Options Based on Average Asset", Journal of Banking and Finance, 14:113-129.

Turnbull, S. and Wakeman, L., (1991). "A Quick Algorithm for Pricing European Average Options", The Journal of Financial and Quantitative Analysis, 26: 337-289.

POPULATION DECLINE AND ITS CHALLENGES
FOR ECONOMIC GROWTH

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Abstract

The aim of this paper is to analyze the effects of population decline on economic growth in Romania compared with the large economies in the EU, by their implications on the main economic indicators of growth, GDP and GDP/capita. Population around the world, including in Romania, is in decline, which will continue to accelerate in the following decades. Statistics show that, in order to stop the population, decrease, the birth rate should remain above 2.1 children per woman. In developed countries, this rate is already below 2.1 and, in the developing countries, it will drop below this level in the next decades. Based on these facts, this article examines the following hypothesis: the population decline does not imply a decline in GDP or GDP/capita. There is no reason to believe that the GDP of a nation would suffer a decline as a result of its population numbers dwindling since the productive base of a nation will not dissolve. The research applies the statistical and econometrical methods. The data sets are from public official statistics. The expected results are that economic growth will maintain its level or will decrease at a pace slower than that recorded by the population.

Keywords: population changes, economic growth, statistical methods

1. INTRODUCTION

In the last few decades, the structure of the population has changed significantly due to in large part lower fertility rates and higher life expectancy. These changes have overtime caused a decline in population numbers with noticeable effects on economic growth. The portion of the population of age 65 and over has increased at a faster pace than anytime in history as a consequence of low fertility rates causing the family unit to shrink.

Lee and Mason (2011) offer a number of potentially important issues related to changes in population age structure. They studied the interaction between demographic change and human capital investment. They demonstrated that increased human capital investment associated with lower fertility may mitigate the increased cost associated with an ageing population. Population ageing involves growing transfers from workers to the elderly in developed countries today, through rising payroll tax rates and family support burdens.

Guloglu Tuncay, (2005) argues that only a increase in productivity can offset a decline inflicted by a ageing workforce, he also makes the argument that a increase in investments is not sufficient to cover demands.

To get better a grasp of the implications of demographic decline on growth, an analysis has been carried out focusing on Romania and five of the largest economies that are part of the European Union (EU), Germany, France, Italy, Spain and the UK.

This article focuses on the main theme that population decline does not necessarily mean an equal or greater decline in economic growth as measured by the main indicator of GDP and GDP per capita.

The expected results are that economic growth can be sustained even in cases were there is a negative growth rate in population numbers, giving enough time to decision makers to implement corrective measures.

2. THEORETICAL FUNDAMENTALS

The share of the population aged 60 and over is forecasted to grow in size in nearly every country in the world during 2015-2080[i]. As a direct result, labor-force participation will decrease which in turn will diminish savings rates, raising concerns about a future of slow economic growth.

Romania is undergoing a demographic shift in the age structure of its population, this change will have economic and social consequences. An ageing population has a negative effect on public spending, and also on the labor market, and as a consequence on economic growth.

Developed countries are approaching an era of ageing populations due to an increase in longevity and decrease in fertility rates (Harper and Leeson, 2009).
The World Health Organization[ii] in a recent publication noted that the proportion of people aged 65 and above in Europe is predicted to increase from 14% in 2010 to 25% in 2050. As a consequence, the expected results in the near future, are that the prime working age group will be smaller than the old age group

This decline in population growth has been observed since the mid 1970s, when the adult working-age population in several countries overtook the child population (Mason and Lee, 2011).

The involvement of women in the labor force is also considered to be negatively related to the fertility rate (Yong and Saito, 2012).

In the countries that are more developed, a greater number of women have been taking part in an active manner in the labor market (Börsch-Supan, 2013). As a general example, the average growth rate of female employment in the Euro area (18 countries) increased from 1.3% in 1993 to a maximum of 2.5% in 2007[iii], with a recorded grown rate of 0.8% in 2014, lower than in previous years but still significant.

Considering this outcome, the choice of whether or not to have a child has become an option for female employees of industrialized countries. As we know that human capital and the fertility rate are negatively correlated, the increasing trend among women to be better educated will in fact further decrease the fertility rate (Alders and Broer, 2004).

A further argument made by Alders and Broer (2004) is that the current demographic transfer faced by developed countries is no longer an exogenous shock. The

authors stressing that the increase of female capital in the labor market has led to a decrease in the fertility rate.

A falling fertility rate leads to demographics with many working age individuals and fewer children to succeed them (Alam and Mitra, 2012; Navaneetham and Dharmalingam, 2012).

For a highly-developed country, the "ideal" fertility rate is associated with the 2.1 replacement level (Nimwegen and Erf, 2010). In 2011, the fertility rates of almost all the European countries had fallen below the replacement level (**Figure no. 1**). In particular, for Germany, Spain, Italy, Romania, France, and the United Kingdom, the fertility rate is now below the replacement level.
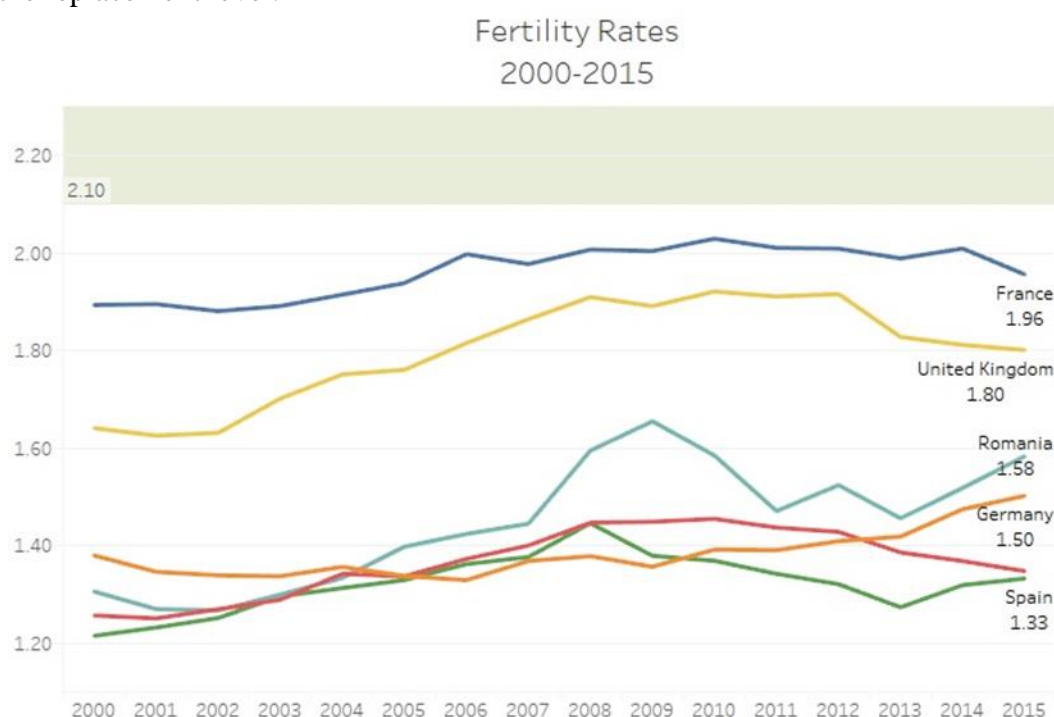
Figure no. 1. Fertility Rates 2000-2015
Source: Own creation, based on Eurostat Data

According to Yong and Saito (2012) a decrease in the fertility rate alone will not turn the population of a country old, a couple of other factors also play a role, such as a decrease in mortality rates and an increase in life expectancy have also played a part.

Structural ageing of a population produces sublet but deep changes on a country's (and its regions) economic growth (Albuquerque and Ferreira, 2015). According to available data, a country with a high ratio of inhabitants in the old age group tends to be associated with decreasing productivity levels, lower savings, and higher government spending (Sharpe, 2011; Walder and Döring, 2012).

Demographic transitions that are taking place in the countries under that are part of this analysis have the effect of increasing the old age dependency ratio, as a consequence smaller working age groups will be obliged to care for the older age group.

In past times, demographic transitions were generally believed to have a net positive effect on economic growth as the proportion of the active working age group was greater than the non-working group (Lee *et al*., 2011).

More recently a great majority of publications reveal that the working segment of the population has become smaller than that of retired people. As a result of the changes that are taking place, most countries are becoming "old" (Weil, 2006; Bell and Rutherford, 2013; Börsch-Supan, 2013).

Projections made by the United Nations[iv] (UN) (2015) present the current global life expectancy to increase to 75 years by 2050 from 65 years in 2005.

The available literature argues in the favor of a negative relationship between population decline caused by ageing and economic growth (Narciso, 2010; Walder and Döring, 2012).

These authors present the argument that the physical capacity, preferences, and needs of individuals will change according with their advancing age. As a consequence, the inequality in age structure (a greater proportion in the old age group) is believed to affect a country's productivity level.

On the other hand, Prettner (2012) sees the existence of a positive relationship between ageing and economic growth for the reason that older individuals tend to save more. Resources which are available for investments, that end up positively affects economic growth.

Aghion and Howitt (1992) presented the rise in life expectancy as a positive impact on investments, especially in R&D, which is generally recognized as an engine for economic growth.

According to Mason and Lee (2013), and Meijer *et al*. (2013) economic growth is affected mainly through three mechanisms: consumption and saving patterns, public and social expenditure, and human capital. It is also important to point out that a reverse causality exists between economic growth and population ageing, in that economic growth may be a determining factor to population ageing (Alders and Brower, 2004). More precisely, Alders and Broer (2004) show that fertility rates have a tendency of declining when a positive productivity shock is encountered, as a result there is a noticeable increase in the cost of having children and a substitution effect appears between children and the consumption of goods.

The international financial and economic crisis from 2008 and subsequently the economic slump that followed had an important impact on demographics. Bringing about increases in unemployment rates and with that a reduction in income that in turn has contributed to a reduction in fertility rates, especially for developed countries. (Weil, 2006).

Walder and Döring, (2012) have noted that a rise in population ageing will lead to changes in household's consumption patterns, changing overall spending preferences according to needs.

According to Lee and Mason (2007) the increase in the ageing population will have the effect of reducing the *per capita* income of all three generations (child, working group, and pensioner) which will lead to a net decrease in the family's total consumption.

The surge in the old age dependency ratio is anticipated to diminish the disposable income of the working population and lead to a further drop in the fertility rate (Hock and Weil, 2012).

An additional argument suggests that with population ageing an increase will occur in the way funds are allocation by the government towards social security programs than to education and infrastructure investment, this changes in government priority will ultimately impact in a negative way the economic development of the country. (Eiras and Niepelt, 2012)

2.1 Materials and methods

For the purpose of determining whether there is a tangible link between the decline in population numbers as a whole and what effects if any this decline might have on the main indicators of growth of a nation, most notably the Gross Domestic Product(GDP) and the Gross Domestic Product per inhabitant (GDP per capita). As covered in the previously there is no doubt that the major five economies in the European Union are facing a dangerous situation regarding population numbers, this situation is reflected in our own country, were we have seen a steady decline in population numbers.

The analysis has been conducted on the 5 major economic powerhouses of the EU (Germany, UK, France, Spain and Italy) to get an overview of the general situation and we will draw comparison lines between each case and that of Romanian, with the aim of proving that in the current age a decrease in population does not necessarily mean a decrease in economic growth for all the countries subjected to the analysis. To get a better grasp on the changes that happened over time and to better be able to test our hypostasis **that economic growth can be sustained even under dwindling population numbers**, we choose a time frame from 1993 to 2016.

In order to conduct a thorough study on the influences represented by a country's declining population on its economic growth and prosperity we started by collecting the data sets for all major indicators stated above. The data on population and on the main indicators of growth was obtained from EUROSTAT.

After the data collection process was completed the files underwent a cleaning and sorting procedure to get them ready for processing in Eviews 9.

The methods used are Least Squares Regression (LS) and Correlation, the results are presented in a visual way using images and tables that can be found in the Annex.

2.2 Analysis

The results of the analysis confirm the hypostasis that economic growth can be maintained even with declining population numbers.

In Romania, as can be observed (***Figure no. 5 from Annex***), between 1993 and 2016 the population has decreased from 22.7 Million to 19.7 Million, as a result of migration, declining fertility rates and other natural causes. The Romanian GDP and GDP per capita has steadily moved upwards resulting in a negative correlation of 0.9 in both cases (***Table no. 5 from Annex***).

Germany is a particularly interesting case as it is the "oldest" developed country in the European Union (EU) and its economic powerhouse at the same time, its population suffers from a visible decline (***Figure no. 3 from Annex***) from 82.5 Million inhabitants in 2004 to 80.2 Million in 2010, its population numbers are at present close to its 2004 figure in large part due to migrants. Two scenarios have been tested, in the first one a weak negative correlation of -0.3 was obtained (***Table no. 2 from Annex***), due to the large fluctuation in population numbers, according to DESTATIS[v] between 2010-2015, 4.6 Million migrants have entered Germany. For the second scenario, we subtracted net migration from the general population, the results reflecting our expectations with a negative correlation of -0.6(***Table no. 3 from Annex***).

In Frances case, there is a strong positive correlation of 0.99 between population growth and economic growth (***Table no. 1 from Annex***). The population of France as a whole has grown at a steady pace through an increase in fertility rates, having the highest rates of any of the analyzed countries and also as a result of migration (***Figure no. 2 from Annex***).

Spain has seen a steady increase in population numbers from 39.2 Million in 1993, reaching a peak of 46.8 Million in 2012 followed by a steady decline to 46.4 Million in 2016(***Figure no. 6 from Annex***). This increase is mostly cause by migration since its fertility rates are among the lowest, currently hovering at 1.3 children per female. Its economy has been impacted harder than expected by the economic crisis in 2008 with lingering results. The results of the analysis are in line with expressed expectations and are of a positive correlation rate between population numbers and GDP of 0.95 and population and GDP per Capita of 0.93(***Table no. 6 from Annex***).

In the case of Italy from (***Figure no. 4 from Annex)***) we can observe two things a steady growth in population numbers caused mainly by migration and an increase in GDP and GDP per capita up until 2008, followed by a correction brought about by the economic crisis that followed and a return to previous levels of growth in the years that followed, recovering the losses. The results of the analysis are as follows, between population and GDP we can observe a positive correlation of 0.8 and between the population and GDP per capita of 0.75(***Table no. 4 from Annex***). Giving further credence to the argument.

The United Kingdom has seen a sharp rise in its population from 57 Million in 1993 to 65 Million in 2016(***Figure no. 7 from Annex***) due to its open-door policies, its economic growth since 2008 has moved sideways, hovering around levels recorded in 2008. The results are of the analysis are as follows a 0.81 correlation coefficient between GDP and population and a 0.98 correlation coefficient between population and GDP per capita (***Table no. 7 from ANNEX***).

3. CONCLUSIONS

To conclude economic growth can be maintained under the guise of a shift in population growth, even under the scenario of a negative growth pattern in population numbers like the case for Romania and Germany. The main reason being that even with a decline in population numbers the effects on economic growth can be offset by a rise in efficiency brought about by automation, by the structural shift of workers from lower

paying sectors to higher paying ones and with the help of migration to fill lower skilled positions.

After a, thorough analysis of the data, the validity of the hypothesis that economic growth, as measured through the main economic indicators of GDP and GDP per capita, can be maintained even with dwindling population numbers, is confirmed with a certain degree of confidence. The reason stemming from the basic understanding that even if a developed country suffers from falling population numbers be it from a structural imbalance or as a result of lower birth rates, one can state with absolute certainty that it's production means will not vanish overnight.

The fact is that even under those conditions a level of moderate growth can be achieved and even sustained for a foreseeable period of time, opening the door for corrective measure to come into effect.

Following the results of the analysis under the guidance of an ample literature on the effect of population ageing and its subsequent decline on economic growth there can be observe that for the 5 main economic engines of the European Union (EU) a main theme emerges that is in effect with different levels of intensity.

In the case of Romania and Germany an inverse pattern can be observed, with negative correlations suggesting that a decline in population does not mean a decline in economic growth, giving further credence to the hypothesis. Germany is a particularly interesting case because it is trying to solve its population decline by way of migration, the influx of migrants solves to some degree the population challenges that Germany faces, but a different set of problems arises from the fact that an overwhelming majority of those workers are low skilled, and have difficulty integrating and acquiring basic language skills.

The econometric analysis hold firm for the other countries subject to the study Italy, Spain, UK and France supporting the hypothesis that economic growth as measured through GDP and GDP per capita will maintain an adequate level of growth even under declining population numbers.

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[i] *(Eurostat, "POPULATION PROJECTIONS", http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data)*

[ii] *(World Health Organization, "Healthy Ageing", in http://www.euro.who.int/en/what-we-do/health-topics/Life-stages/healthy-ageing.)*

[iii] *(European statistics (05-11-2012), "Employment growth by sex",*
http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00180&plugin=1)

[iv] *(United Nations : "World Population Prospects: The 2015 Revision",*
https://esa.un.org/Unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf)

[v] *(DESTATIS, " Net Migration & Integration" ,*
https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/Bevoelkerung/MigrationIntegration/MigrationIntegration.html)

REFERENCES

Alam, M. and Mitra, A. (2012), "Labour market vulnerabilities and health outcomes: older workers in India". Journal of Population Ageing, 5, pp. 241-256.

Albuquerque, P. C. and Ferreira, J. (2015), "Envelhecimento, emprego e remunerações nas regiões portuguesas: uma análise shift-share – Ageing, employment and remunerations in Portuguese regions: a shift-share analysis". eure, 41 (122), pp. 239-260.

Alders, P. and Broer, D. P. (2004), "Ageing, fertility, and growth". Journal of Public Economics, 89, pp. 1075-1095.

Aghion, P. and Howitt, P. (1992), "A model of growth through creative destruction". Econometrica, 60, pp. 323-351.

Bell, D. N. F. and Rutherford, A. C. (2013), "Older workers and working time". The Journal of the Economics of Ageing, 1-2, pp. 28-34.

Börsch-Supan, A. (2013), "Myths, scientific evidence and economic policy in an aging world". The Journal of the Economics of Ageing, 1-2, pp. 3-15.

European Commission, (2006), The Demographic Future of Europe – From Challenge to Opportunity, Directorate-General for Employment, Social Affairs and Equal Opportunities Unit e.1.

Eiras, G. M. and Niepelt, D. (2012), "Ageing, government budgets, retirement and growth". European Economic Review, 56, pp. 97-115.

Guloglu T., Guder G.,"The Enlargement of European Union and Labor Market: Trends and Challenges", 2005

Harper, S. and Leeson, G. (2009), "Introducing the journal of population ageing", Journal of Population Ageing, 1, pp. 1-5.

Hock, H. and Weil, D. N. (2012), "On the dynamics of the age structure, dependency and consumption". Journal of Population Economics, 25, pp. 1019-1043.

Lee, S. H. and Mason, A. (2007), "Who gains from the demographic dividend? Forecasting income by age". International Journal Forecast, 23, pp. 603-619.

Mason, A. and Lee, R. (2011), "Population aging and the generational economy: key findings". In R. Lee, A. Mason (eds), Population Aging And Generational Economy Project. A Global Perspective, Cheltenham, UK, and Northampton, MA, USA, Edward Elgar, pp. 3-31.

Mason, A. and Lee, R. (2013), "Labor and consumption across the lifecycle". The Journal of the Economics of Ageing, 1-2, pp. 16-27.

Meijer, C., et al. (2013), "The effect of population aging on health expenditure growth: a critical review". European Journal of Ageing, 10, pp. 353-361.

Narciso, A. (2010), "The impact of population ageing on international capital flows", mpra Paper, 26457

Navaneetham, K. and Dharmalingam, A. (2012), "A review of age structural transition and demographic dividend in South Asia: opportunities and challenges". Journal of Population Ageing, 5, pp. 281-298.

Nimwegen, V. N. and Erf, D. V. R. (2010), "Europe at the crossroads: demographic challenges and international migration". Journal of Ethnic and Migration Studies, 36, pp. 1359-1379.

Prettner, K. (2012), "Population aging and endogenous economic growth". Journal of Population Economics, 26, pp. 811-834.

Sharpe, A. (2011), "Is ageing a drag on productivity growth? A review article on ageing, health and productivity: the economics of increased life expectancy". International Productivity Monitor, 21, pp. 82-94

Walder, A. B. and Döring, T. (2012), "The effect of population ageing on private consumption – a simulation for Austria based on household data up to 2050". Eurasian Economic Review, 2, pp. 63-80.

Weil, D. N. (2006), "Population Aging". nber working paper, 12147.

Yong, V. and Saito, Y. (2012), "National long-term care insurance policy in Japan a decade after implementation: some lessons for aging countries". Ageing International, 37, pp. 271-284.

ANNEX – TABLES AND IMAGES

Table nr. 6. Covariance Analysis between SPAIN _GDP, SPAIN _GDP_CAPITA and SPAIN _POPULATION

Image no. 20. Regression line for GDP/Capita, GDP and population of the United Kingdom

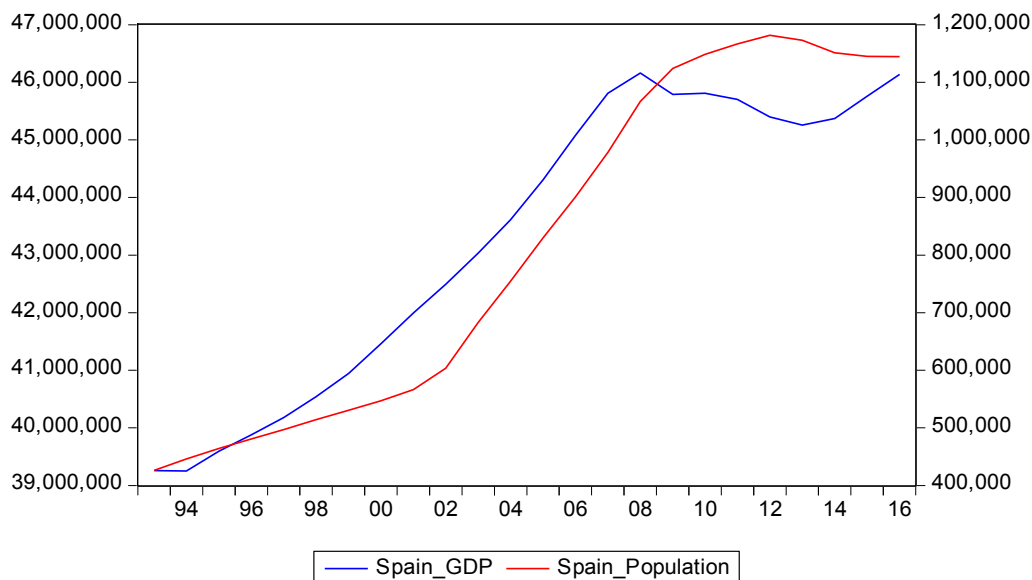Table nr. 7. Covariance Analysis between UK _GDP, UK _GDP_CAPITA and UK _POPULATION

Image no. 2. Changes in the GDP and Population of France
Source: Own processing data in Eviews
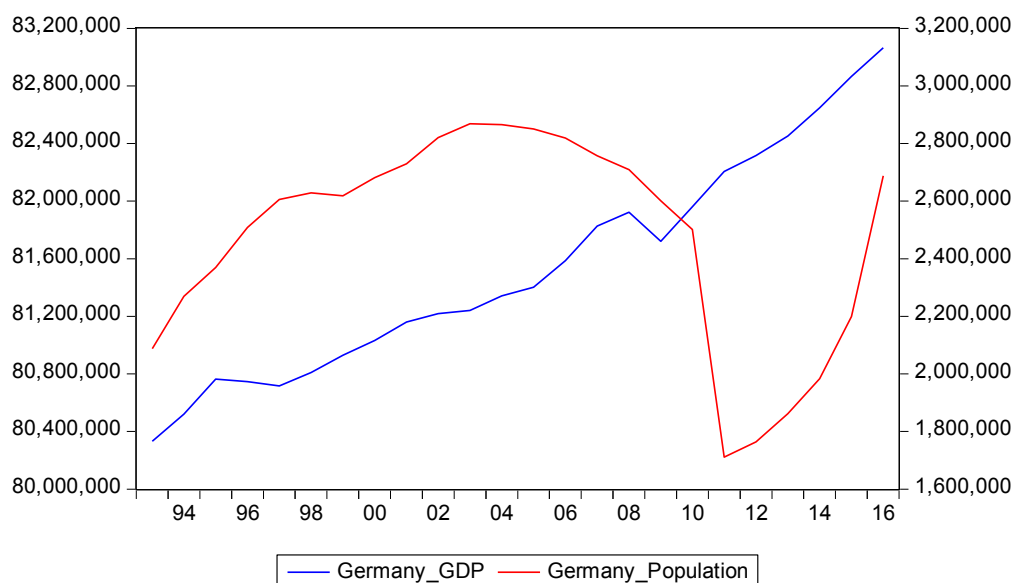
Image no. 3. Changes in the GDP and Population of Germany
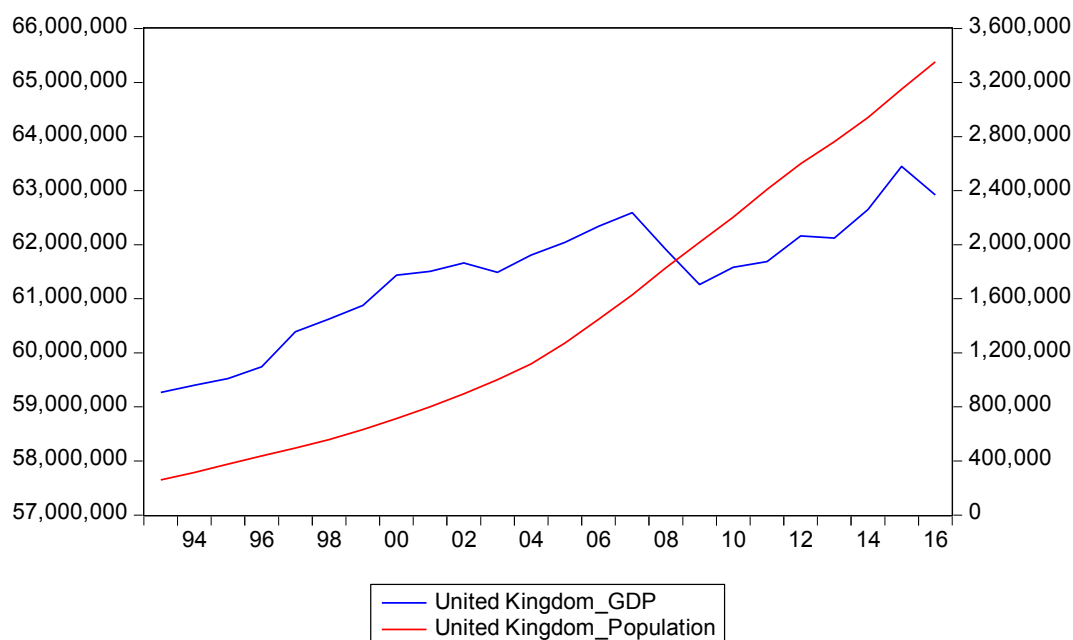
Source: Own processing data in Eviews
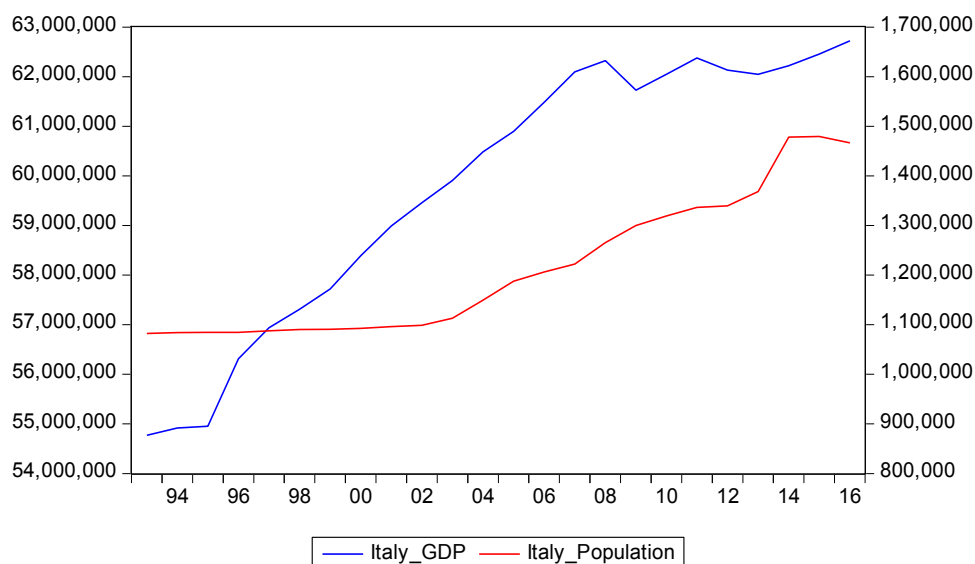
Image no. 4. Changes in the GDP and Population of Italy
Source: Own processing data in Eviews
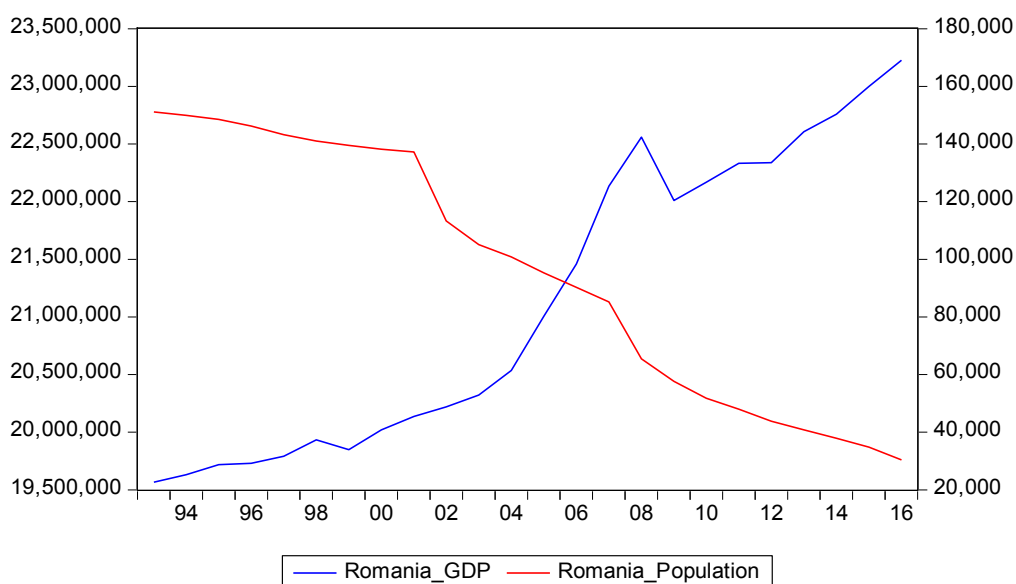
Image no. 5. Changes in the GDP and Population of the Romania
Source: Own processing data in Eviews

Image no. 6. Changes in the GDP and Population of the Spain
Source: Own processing data in Eviews

Image no. 7. Changes in the GDP and population of the United Kingdom
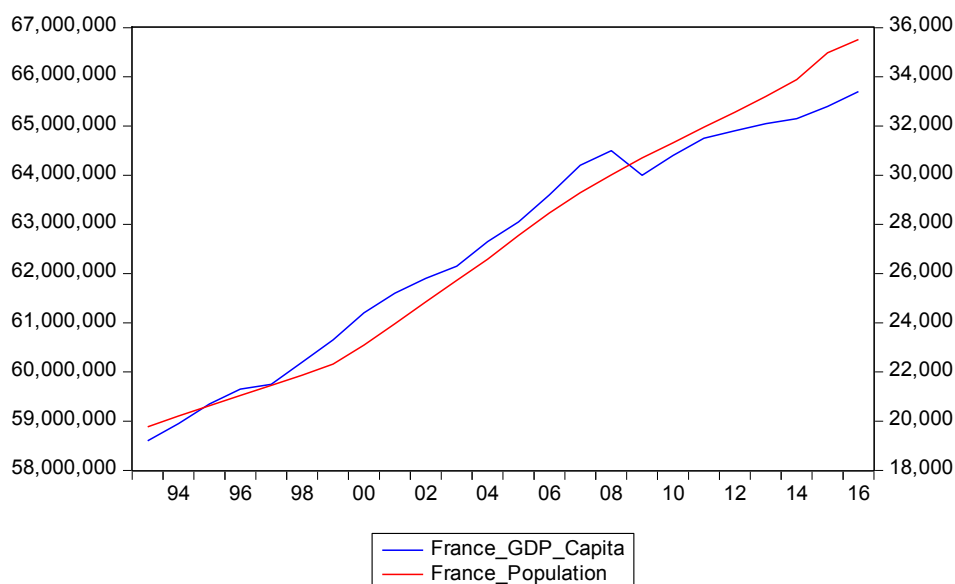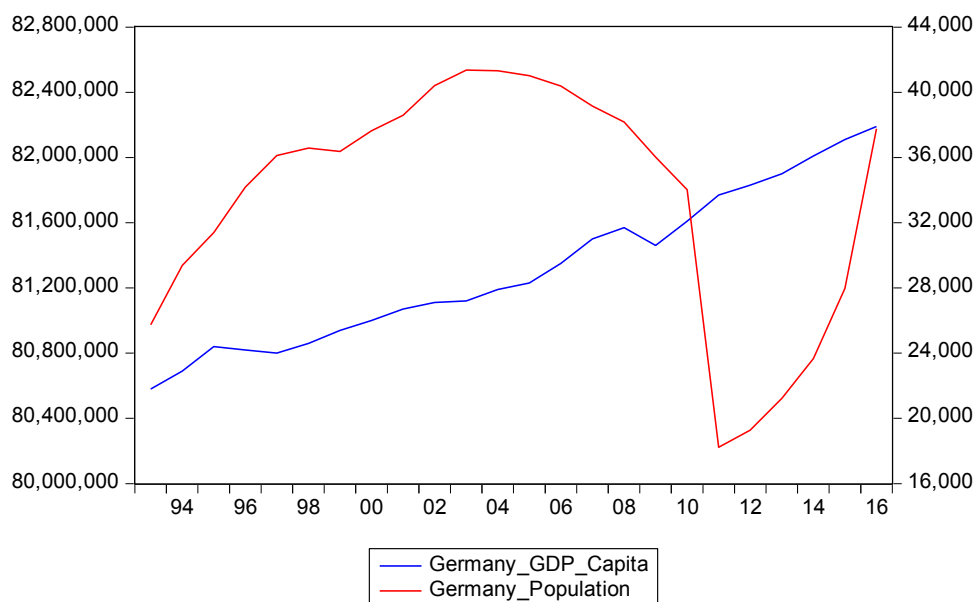Source: Own processing data in Eviews

Image no. 8. Changes in the GDP/Capita and Population of France
Source: Own processing data in Eviews

Image no. 9. Changes in the GDP/Capita and Population of Germany
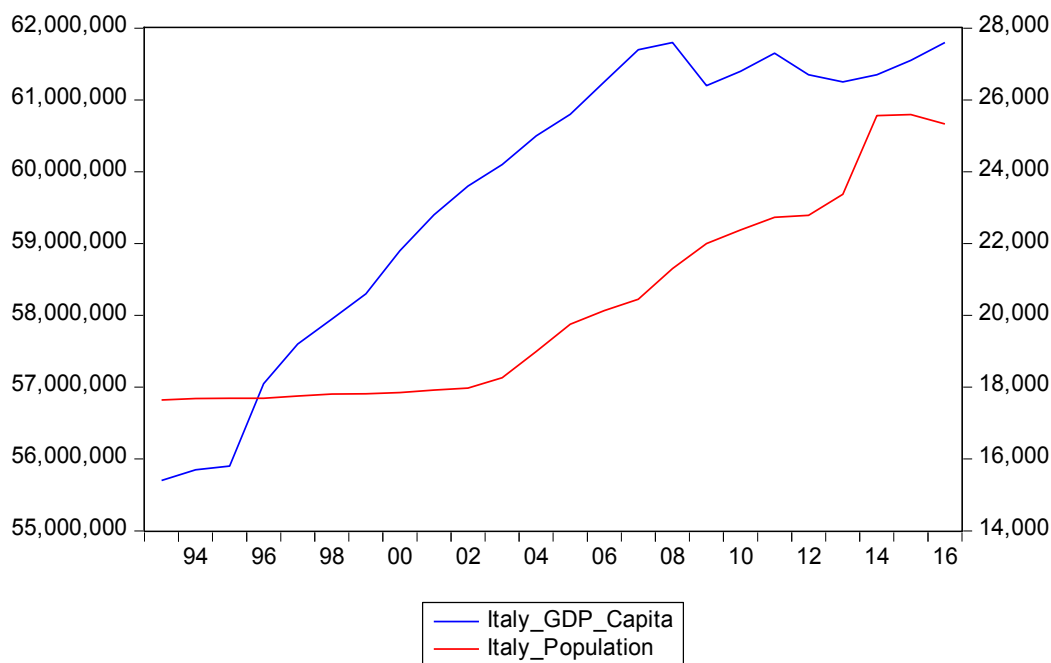Source: Own processing data in Eviews

Image no. 10. Changes in the GDP/Capita and Population of Italy
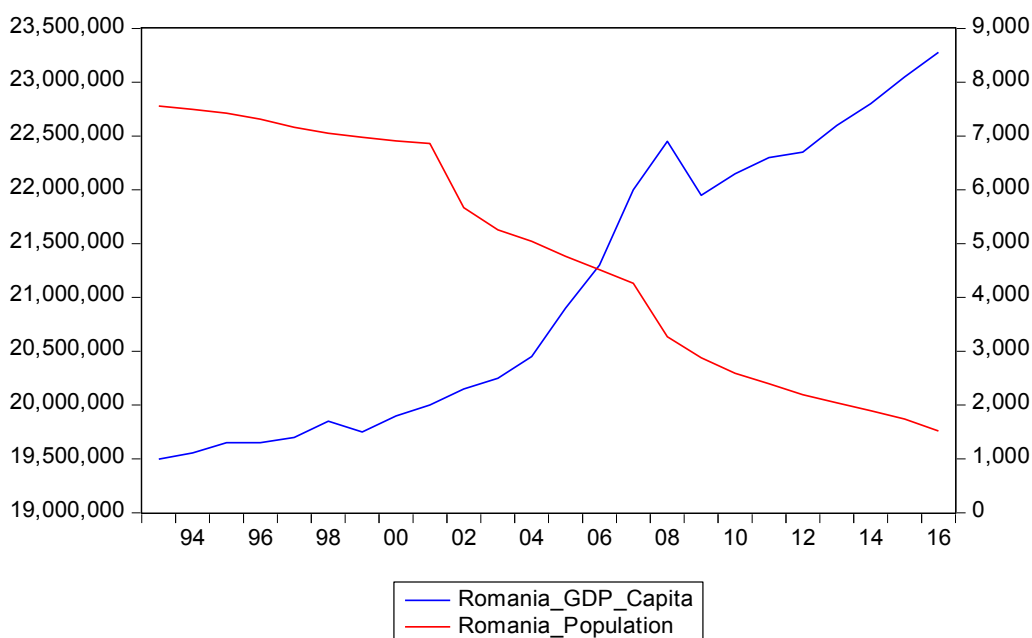Source: Own processing data in Eviews

Image no. 11. Changes in the GDP/Capita and Population of Romania
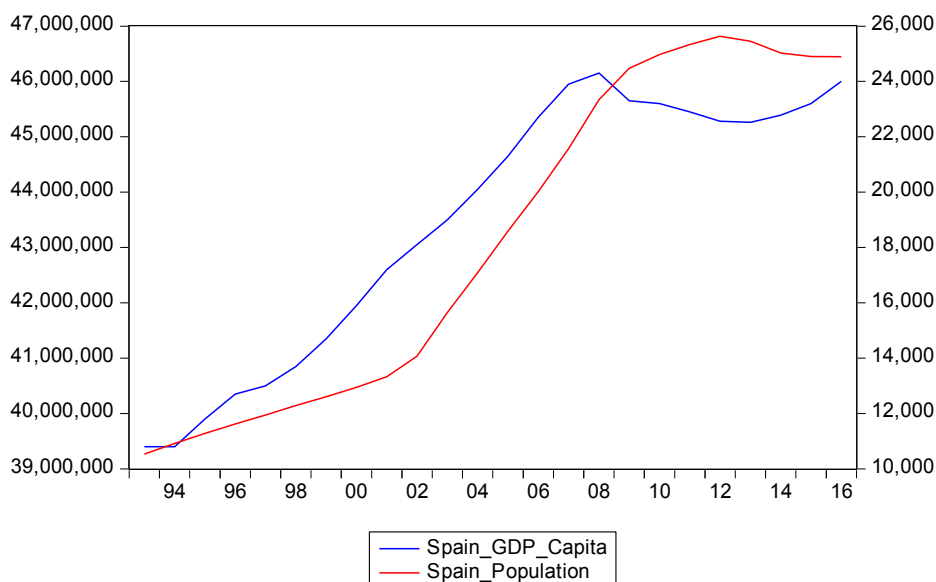Source: Own processing data in Eviews

Image no. 12. Changes in the GDP/Capita and Population of Spain
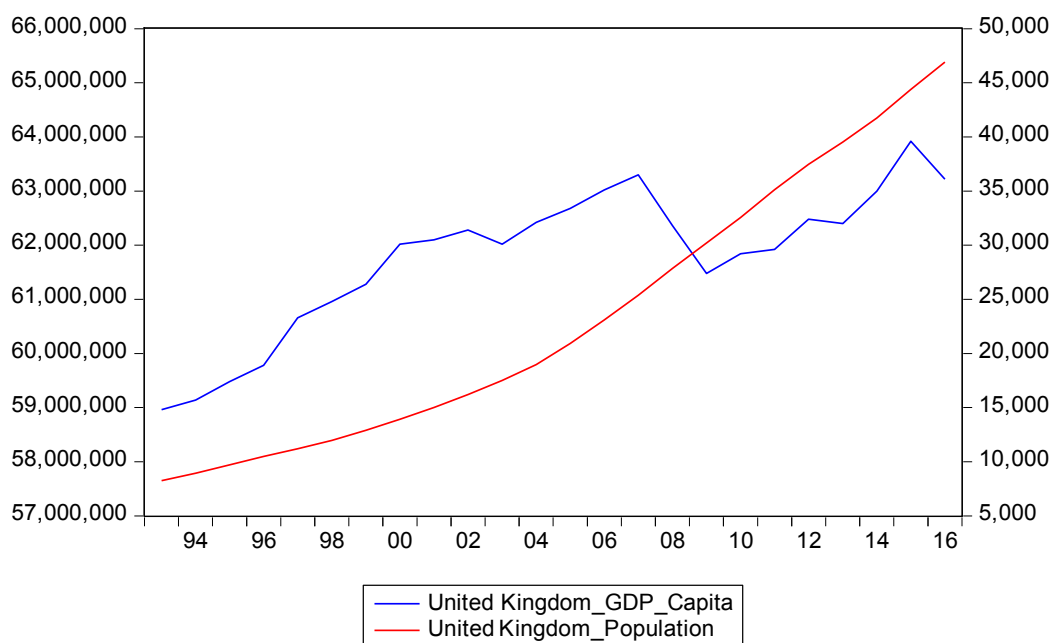Source: Own processing data in Eviews

Image no. 13. Changes in the GDP/Capita and population of the United Kingdom
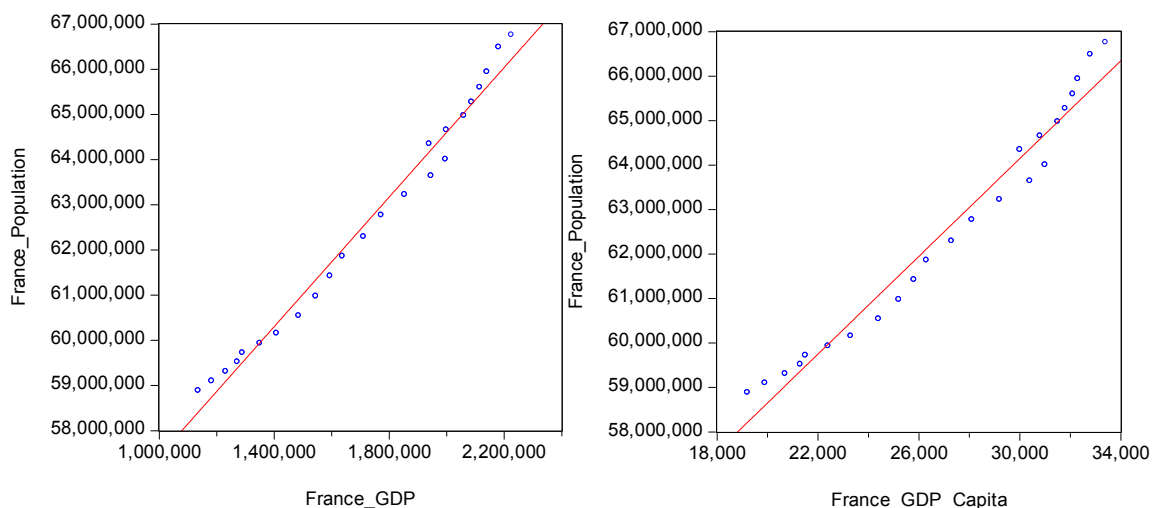Source: Own processing data in Eviews

Image no. 14. Regression line for GDP/Capita, GDP and population of France
Source: Own processing data in Eviews

Table nr. 1. Covariance Analysis between FRANCE_GDP, FRANCE_GDP_CAPITA and FRANCE_POPULATION

Covariance Analysis: Ordinary
Date: 03/26/17   Time: 22:02
Sample: 1993 2016
Included observations: 24

Correlation t-Statistic	FRANCE_GDP	FRANCE_GDP_CAPITA	FRANCE_POPULATION
FRANCE_GDP	1.000000		

FRANCE_GDP_CAPITA	0.998642	1.000000	
	89.90838	-----	
FRANCE_POPULATION	0.991638	0.983920	1.000000
	36.04242	25.83839	-----

Own Creation
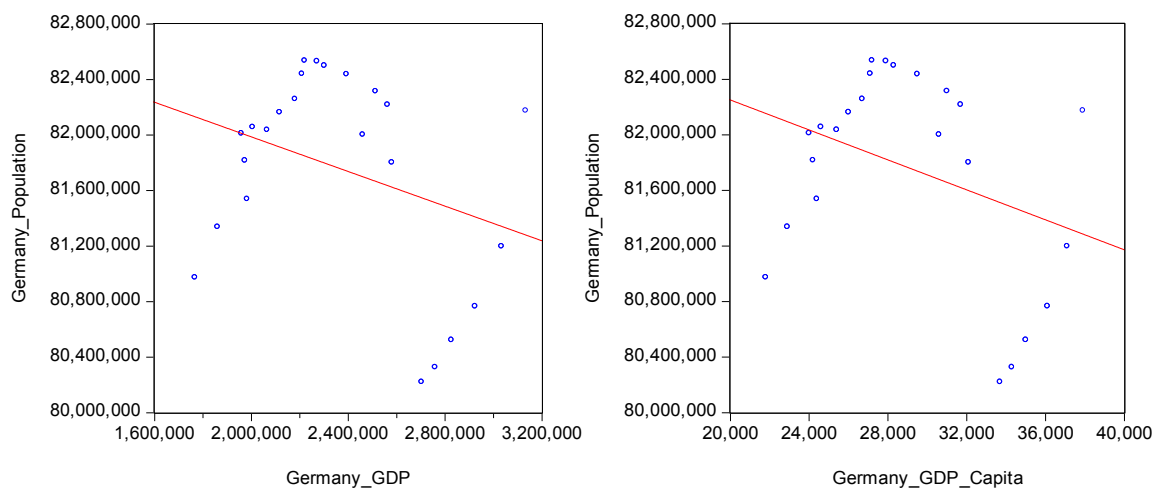Data Sources: Eurostat Database

Image no. 15. Regression line for GDP/Capita, GDP and population of Germany
Source: Own processing data in Eviews

Table nr. 2. Covariance Analysis between GERMANY_GDP, GERMANY _GDP_CAPITA and GERMANY _POPULATION

Covariance Analysis: Ordinary
Date: 04/08/17   Time: 20:41
Sample: 1993 2016
Included observations: 24

Correlation t-Statistic	GERMANY_GDP	GERMANY_GDP_CAPITA	GERMANY_POPULATION
GERMANY_GDP	1.000000		

GERMANY_GDP_CAPITA	0.998872	1.000000	
	98.68551	-----	
GERMANY_POPULATION	-0.329754	-0.352141	1.000000
	-1.638317	-1.764721	-----

Own Creation
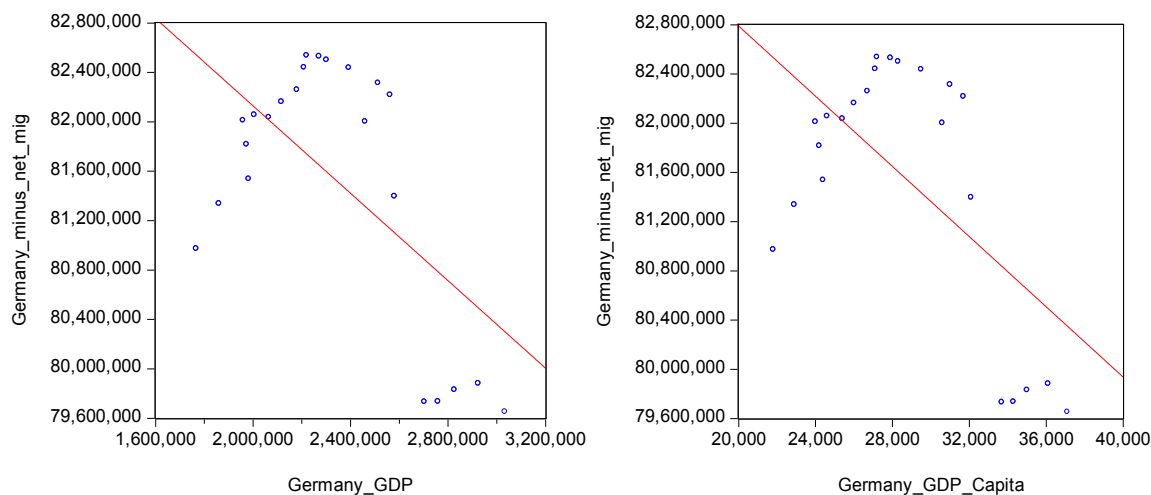Data Sources: Eurostat Database

Image no. 16. Regression line for GDP/Capita, GDP and population minus net
migration of Germany
Source: Own processing data in Eviews

Table nr. 3. Covariance Analysis between GERMANY_GDP, GERMANY
_GDP_CAPITA and GERMANY _POPULATION_MINUS_NET_MIGRATION

Covariance Analysis: Ordinary

Date: 04/08/17   Time: 20:44

Sample: 1993 2015

Included observations: 23

Balanced sample (listwise missing value deletion)

Correlation			
t-Statistic	GERMANY_GDP	GERMANY_GDP_CAPITA	GERMANY_MINUS_NET_MIG
GERMANY_GDP	1.000000		

GERMANY_GDP_CAPITA	0.999369	1.000000	
	128.9026	-----	
GERMANY_MINUS_NET_MIG	-0.607550	-0.613912	1.000000
	-3.505235	-3.563962	-----

Own Creation
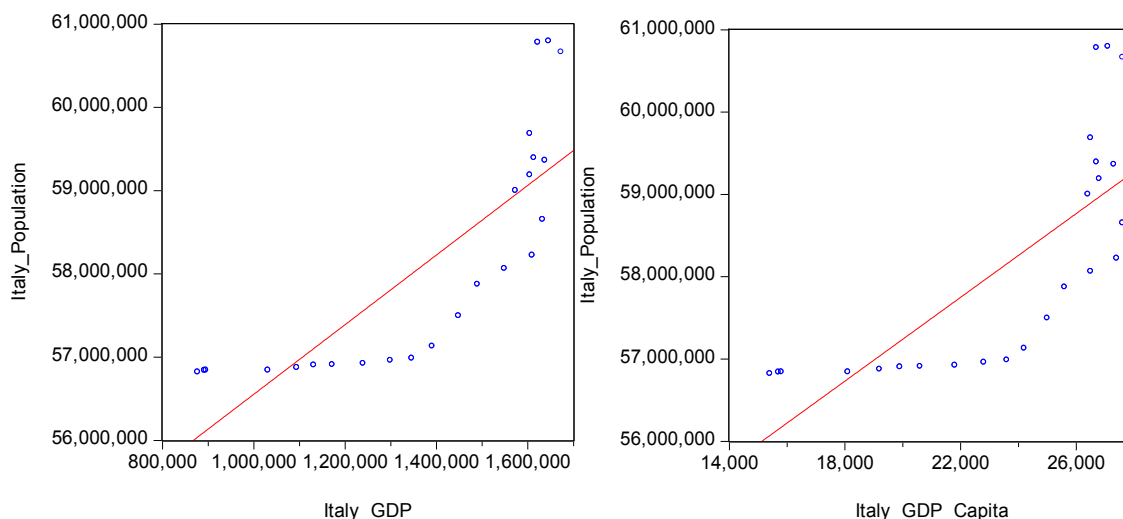Data Sources: Eurostat Database

Image no. 17. Regression line for GDP/Capita, GDP and population of Italy
Source: Own processing data in Eviews

Table nr. 4. Covariance Analysis between ITALY_GDP, ITALY _GDP_CAPITA and ITALY _POPULATION

Covariance Analysis: Ordinary
Date: 03/26/17   Time: 22:04
Sample: 1993 2016
Included observations: 24

Correlation t-Statistic	ITALY_GDP	ITALY_GDP_CAPITA	ITALY_POPULATION
ITALY_GDP	1.000000		

ITALY_GDP_CAPITA	0.995799	1.000000	
	51.00805	-----	
ITALY_POPULATION	0.811269	0.757083	1.000000
	6.508240	5.435376	-----

Own Creation
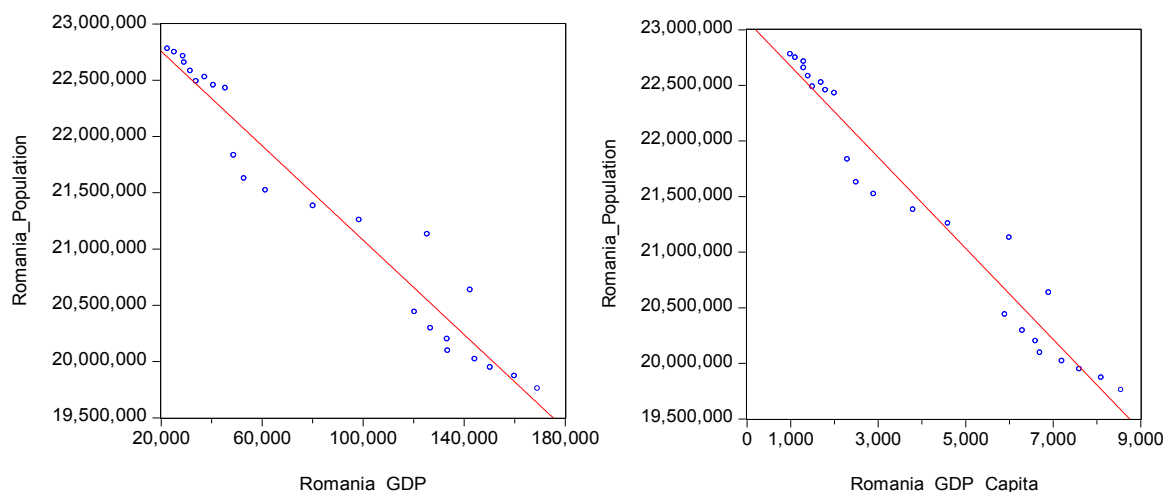Data Sources: Eurostat Database

Image no. 18. Regression line for GDP/Capita, GDP and population of Romania
Source: Own processing data in Eviews

Table nr. 5. Covariance Analysis between ROMANIA _GDP, ROMANIA _GDP_CAPITA and ROMANIA _POPULATION

Covariance Analysis: Ordinary

Date: 03/26/17   Time: 22:06

Sample: 1993 2016

Included observations: 24

Correlation t-Statistic	ROMANIA_GDP	ROMANIA_GDP_CAPITA	ROMANIA_POPULATION
ROMANIA_GDP	1.000000		

ROMANIA_GDP_CAPITA	0.999368	1.000000	
	131.9050	-----	
ROMANIA_POPULATION	-0.975329	-0.978317	1.000000
	-20.72285	-22.15535	-----

Own Creation
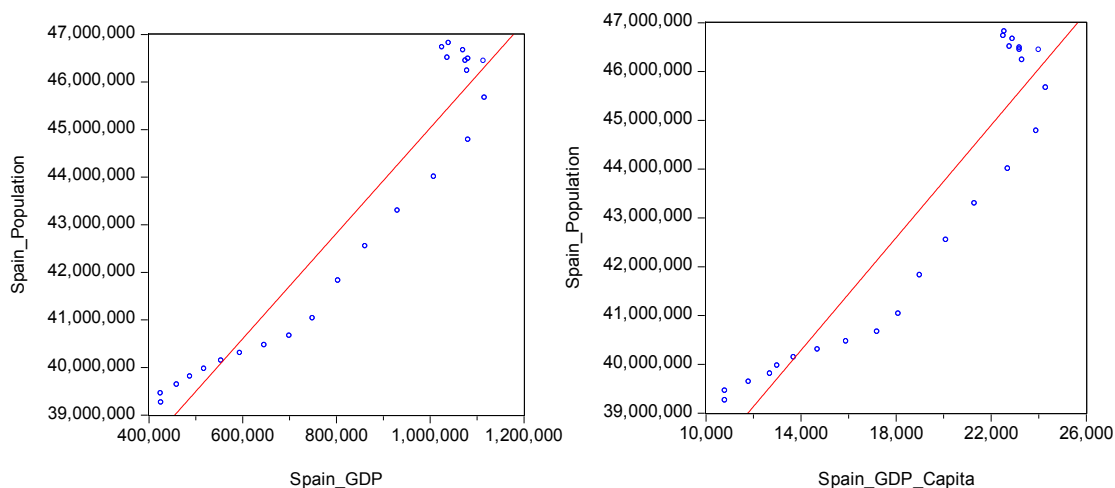Data Sources: Eurostat Database

Image no. 19. Regression line for GDP/Capita, GDP and population of Spain
Source: Own processing data in Eviews

Table nr. 6. Covariance Analysis between SPAIN _GDP, SPAIN _GDP_CAPITA and SPAIN _POPULATION

Covariance Analysis: Ordinary

Date: 03/26/17   Time: 22:06

Sample: 1993 2016

Included observations: 24

Correlation t-Statistic	SPAIN_GDP	SPAIN_GDP_CAPITA	SPAIN_POPULATION
SPAIN_GDP	1.000000		

SPAIN_GDP_CAPITA	0.996381	1.000000	
	54.98417	-----	
SPAIN_POPULATION	0.956983	0.933050	1.000000
	15.47047	12.16521	-----

Own Creation
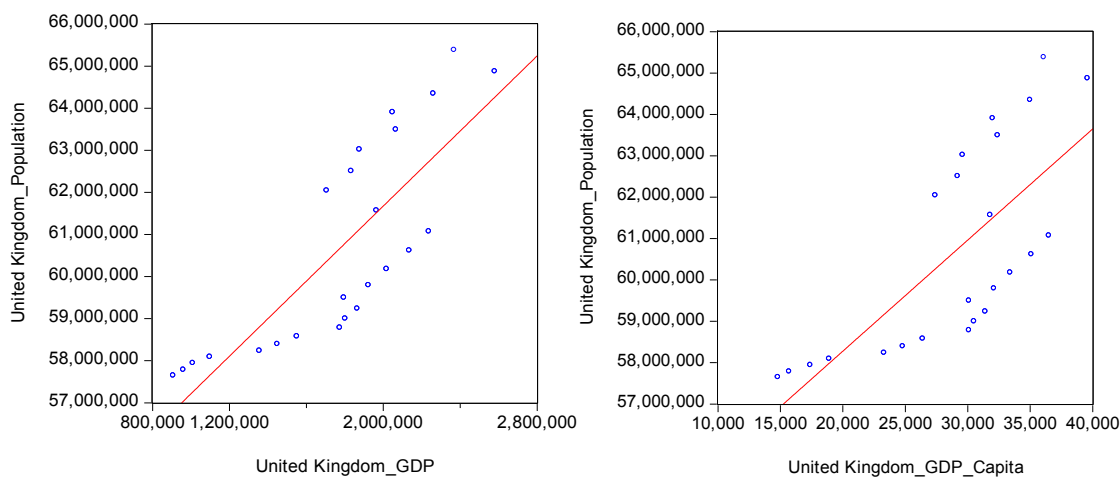Data Sources: Eurostat Database

Image no. 20. Regression line for GDP/Capita, GDP and population of the United
Kingdom
Source: Own processing data in Eviews

Table nr. 7. Covariance Analysis between UK _GDP, UK _GDP_CAPITA and UK
_POPULATION

Covariance Analysis: Ordinary
Date: 03/26/17   Time: 22:07
Sample: 1993 2016
Included observations: 24

Correlation			
Probability	UNITED_KINGDOM_GDP	UNITED_KINGDOM_GDP_CAPIT	UNITED_KINGDOM_POPULATIO
UNITED_KINGDOM_GDP	1.000000		

UNITED_KINGDOM_GDP_CAPIT	0.989987	1.000000	
	0.0000	-----	
UNITED_KINGDOM_POPULATIO	0.810886	0.726321	1.000000
	0.0000	0.0001	-----

Own Creation
Data Sources: Eurostat Database

MOBILE APPS, GAMES AND GAMIFICATION SOLUTIONS FOR SUSTAINABLE BUSINESS DEVELOPMENT IN TOURISM

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Abstract

The last years have seen the companies concentrating their efforts towards the identification and support of the sustainable development of businesses. In a generalised conceptualisation the viability of sustainable development of a business supposes a mix of sustainability elements covering at least three dimensions: economic, social and environmental. It is well-known that the software industry was the one that provided innovative solutions for companies in order to maintain a sustainable development of their business. In this context, the present article starts from taking into consideration two aspects, namely: the indisputable evolution in the number of applications and solutions from the category of business games on one hand, and on the other hand, the rapid growth of the offer of gamification solutions. Thus, the article presents the most important categories of solutions dedicated to tourism – mobile apps, games and gamification as innovative tools adopted for sustainable business development. We consider that the results obtained from this paper may constitute a useful informational support for the user companies in their quality of potential adopters of these solutions..

Keywords: mobile apps, games, business games, gamification.

Classification JEL: L86, L83, M15

1. INTRODUCTION AND LITERATURE REVIEW

It is well-known the fact that the ICT industry has continuously provided innovative solutions to the business environment contributing implicitly to the sustainability of business activities in all industries; one of the most adaptive industries is the tourism, being as well one of the most exposed to the need for permanent adaptation to the increasing mobility of tourists.

From this point of view, tourism was among the first industries that were obliged to find innovative solutions to attract and engage tourists, respectively increase their loyalty in this way achieving, on one hand, a competitive advantage essential on the competitive global market, on the other hand, sustainable development of tourism companies and in the end, of tourism as a whole.

At global level, the last years' actions of the European Commission aimed at the tourism industry and its sustainable development are well-known; the European Commission "incorporates sustainability in tourism related policies/actions and encourages

member states /tourism stakeholders to develop more sustainable tourism (by exchange of good practice, assisting, providing a supportive policy framework)" (Sust1, 2017).

The WTTC (World Travel & Tourism Council), in collaboration with Oxford Economics revealed in their report for 2016 that the contribution of travel and tourism industry reached 10.2% of the global GDP, supplying jobs to 10% of the world population; and, for the following 10 years, estimates provide encouraging data for this industry forecasting a yearly increase rate of 3.9% (WTTC, 2017).

At the level of year 2016, sales of online tourism services at global level (air travel, hotels and OTAs) summed up to over 564.9 billion USD, and by the end of year 2020 the forecasts for this services show a further increase to 817.5 billion USD; for the mobile and desktop travel sales segment that generated about 168 billion USD in 2015 a massive increase is estimated by the year 2019 (Statista, 2017).

According to the International Institute for Sustainable Development (IISD) "sustainable development demands substantial investments to create long-term economic and social benefits without compromising the natural environment" (IISD, 2017).

From a practical perspective, the definition of sustainable business development states that it **"**involves the application of sustainability principles to business operations and can mean a variety of things − ecological sustainability, social sustainability or even sustained economic growth" (Sustscale, 2017).

Business sustainability or its synonym, corporate sustainability, is defined as "the management and coordination of environmental, social and financial demands and concerns to ensure responsible, ethical and ongoing success" (Tech, 2017).

In the tourism industry, according to United Nation's World Tourism Organization (UNWTO), sustainable tourism can be defined as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, industry, environment and host communities" (UNWTO, 2017).

International Telecommunication Union (ITU), one of the affiliates of the United Nation's #ICT4SDG project, pointed out that "all three pillars of sustainable development - economic development, social inclusion and environmental protection - need ICTs as key catalysts, and ICTs will be absolutely crucial for achieving the SDGs (sustainable development goals)"; through this project a set of 17 working direction was established in a mutual effort to approach and solve the most pressing global problems from the perspective of humanity as well as the entire planet, until 2030; among the 17 directions we can find the industry, innovation and infrastructure, responsible consumption and production, sustainable cities and communities, etc. (ITU, 2017).

The development of mobile technologies, the increase in the number of mobile device users and the automatic emulation of the tourism service users' profile on their mobile infrastructure made it possible for the software industry to generate different categories of application, more and more attractive for tourists.

Starting from these aspects, we considered important to carry out a study concerning these generic categories of applications dedicated to the tourism industry, identifying them and considering the contribution generated by their use to the sustainable development of tourism activities. We consider that the results obtained from this study can provide an informational base that is useful to tourism companies concerned with the

sustainable development and with maintaining the competitive advantages through the use of the innovative solutions offered by the software industry.

2. MOBILE APPS, GAMES AND GAMIFICATION FOR TOURISM - AN OVERVIEW

a. Mobile apps

According to the statistics in this field, at the end of year 2016, mobile applications from travel/tourism category were ranked only the seventh (3.88%) among the downloading preferences of mobile device users for devices running Android operating system, after the following categories: games (24.85%), business (9.96%), education (8.55%), lifestyle (8.44%), entertainment (6.16%) and utilities (4.90%) (Statista1, 2017).

At the level of February 2017, in Google App Store, there were over 102,500 applications in the Travel & Local category available for downloading (Appbrain, 2017). iMOBDEV Technologies, one of the most important providers of mobile solutions and applications, identified a few important categories of benefits obtained by tourism companies as a result of using dedicated mobile applications, namely: "automation (the information is instantly available for people), collaboration (based on travel technology), security (based on travel technology all clients' information and details safe and sound), excellent CMS (content management system), one stop solution (anything and everything can be housed and provided by a single travel portal)"; the same company, looking at tourists as users of mobile applications, points out that 85% of tourists use mobile apps to plan their travel when on leisure tours, 30% to find the best hotel and flight deals, 15% to plan a trip ahead, 15% specifically for the upcoming vacations/holidays, 49.1% use map features, 62.1% search restaurant, 8.1% buy tickets, 12.6% look for public transportation, 11.2% search for hotel, 55.8% check weather (ImobDev, 2017).

Trekksoft, a company providing software solutions dedicated to travel and tourism industry identified a set of seven global tendencies in the tourism industry for 2017. These tendencies refer to the following: millennials (the largest generation in history - the largest market in travel), active & adventure trips, female solo travel (over 80% of travel decisions are made by women), food tourism (an emerging trend among travellers), responsible tourism (more travellers are aware of the impact their experiences have on the planet), mobile photography, business and leisure travel (the favourite topic among tourism experts)" (Trekksoft, 2017). According to the same company, the tourism industry is already mobile-optimised, statistically looking as follows: between 2011-2015, mobile bookings increased by 1700%; more than 45% of the tourists use a smartphone for activities related to booking travel; 8% of them book their tourism package from a mobile device during their travel; and over 85% of the tourists at global level use mobile devices during their travel (Trekksoft1, 2017).

Starting from aspects related to the total market share of mobile operating systems, and the supremacy of the use of Android systems at global level (86.2%) in comparison to iOS (12.9%), the second operation system in the preferences of mobile device users in 2016, as well as the very high number of mobile applications developed and available for

Android in comparison to other operating systems, our study was focused on applications available for Android (To5mac, 2017).

Thus, from Google Play Store, from the Travel & Local applications category, the first 10 free of charge applications were selected based on the number of downloads; we have to specify that in their selection other criteria had been taken into account as well, such as: the applications had to belong to the Top business apps category, have 4 stars+ reviews, a large number of installations, Top developer/Editor's choice badge and Rating standards PEGI3 (content suitable for all age groups, rating standard according to Pan European Game Information (PEGI)).

As a result, the set of mobile applications preferred by tourists consists of: *Booking.com Hotel Deals* by Booking.com, *Maps - Navigation & Transit* by Google Inc., *MAPS.ME - Map & GPS Navigation* by My.com B.V., *Friend Locator: Phone Tracker* by Friend Locator Inc., *Trivago* - Hotel & Motel Deals by Trivago, *Skyscanner* by Skyscanner Ltd, *WiFi Map - Free Passwords* by WiFi Map LLC, *TripCase - Travel Organizer* by Sabre Traveler Solutions, TripIt: Travel Organizer by TripIt, Inc*., PackPoint travel packing list* by Wawwo, *Digital World Clock Widget* by HPSOFT; it has to be mentioned that all these applications have their iOS compatible version and are available for devices running with iOS operating system.

b. Games

According to market researcher SuperData, the year 2016 was labelled "the biggest year in the digital games market and playable media world ever"; the same company, in the report "Market Brief - Year in Review 2016", points out that this market reached the value of $91B and "Consumers spent $41 billion on mobile games in 2016, driven by blockbuster hits like Pokémon GO and Clash Royale" (SuperData,2017).

Travel group games

According to "The Group Travel Leader" magazine dedicated to travel industry, the travel games for groups of tourists category includes a few well-defined subcategories, namely: *scenery themed* (starting from a presented image, tourists must make diverse associations related to travels), *knowledge quizzers* (starting from images, tourists must recognise diverse places and destinations), *comical word puzzles* (words and images associated in an entertaining way and suggesting touristic places and destinations), *icebreakers games* (entertaining games for groups of tourists), *games of chance* (a kind of bingo game based on travel words), *custom-made fun* (fun group game based on imagination and travel destination), *miscellaneous games*, *seasonal games, youth focused games, destination focused games* (GroupTrav, 2017).

AR applications and games

From practical perspective, augmented reality (AR) can be defined as a modality to display, visualise in real time several layers of information taken over from the AR user's environment and can have diverse forms of digital representation from text to image and multimedia (Digitaltrends, 2017).

In time, Augmented Reality has developed a coverage of applications for all the fields of activities; for the tourism industry AR applications being based on location-based services allow, for example, the identification of points of interest regarding locations for

serving dinner in a geo-localised area using communication through social media (Farhat and Senjav, 2013).

AR was identified as "a popular tool to enhance the tourist experience because of its ability to overlay information, improving users' perception and interaction with the real world and enhance the educational and entertainment experience" (Cranmer and others, 2016).

In case of AR applications dedicated to tourism, a set of 12 specific functionalities was identified, namely: "search and browse, context-aware push, m-commerce, feedback, routing and navigation, tour generation, map services, communication, exploration of visible surroundings, interactive AR view and filtering of AR content" (Zornitza and others, 2012).

One of the very well-known examples of AR applications dedicated to tourists is the AR multiplayer game Ingress (https://www.ingress.com/) created by Google and Niantic labs (http://www.nianticproject.com/) (Gamesandtourism, 2016).

Mobile games

The general definition of mobile games states that they "are games designed for mobile devices and portable media players, range from basic to sophisticated (3D and augmented reality games), have a wide range of connectivity features, including infrared, Bluetooth, Wi-Fi and 3G, and facilitate wireless multiplayer games with two or more players" (Techop, 2017).

According to Newzoo Global Games Market Report the global games market statistically reached $99.6 billion in 2016, mobile games generating 37% of the global market (Newzoo, 2017).

According to Entertainment Software Association there are a few very well-known examples in the video games and mobile games for tourism category, largely used by tourists, such as: *Stray Boots* (available also on Google Play Store, allows the tourists' immersion in the surroundings of the place of destination) and *Pocket Ranger* (GPS-controlled mobile game that allows the discovery of historical places and touristic places of interest in the area of destination) (Esa, 2017).

According to the travel games developer Espoto (http://www.espoto.com), the most required games by tourists were: *City Rally* (discovery and exploration of archaeological sites and cultural locations in the visited area), used in the European metropolitan areas; *GPS scavenger hunt***,** a geo-caching game, very much loved by tourists. Evidently, we must not forget the games dedicated to football fans and launched on the occasion of football competitions as it is the case of the *UEFA European Championship quiz* (Espoto, 2017).

DMOs (Destination Marketing Organizations) had an important role in the adoption of mobile games and mobile application types of solutions in tourism; thus, it is well-known the fact that for the majority of destinations known in the world DMOs took charge of the creation of such applications to promote them and attract the tourists. A good example in this case is Switzerland, an important provider of tourist destinations, who used mobile applications and mobile games to attract tourists; thus, the mobile game called "*The Family Trips"* is one of the solutions used by tourists for adventure and exploration during travels (Myswitz, 2016). The company VisitApps is one of the important providers that, in collaboration with DMOs, offered a large variety of applications for tourists; the

company's offer includes over 120 applications for Android as well as for iOS dedicated to tourists in the visitors' guides category of applications, having a large range of features: GPS locating and directions, high-res images, easy navigation with action bar, calendar feeds, messages inbox, one-touch social sharing, favourites/itinerary builder, etc. and offering support to tourists to improve the visitor experience, drive in-destination spending, increase in-destination spending & increase the chance of a longer stay, communicate with visitors in real time   (Visitapps, 2016).

The success of "Pokémon Go." during the year 2016 is well-known and, as a result of it, a very evident tendency of tourism companies emerged to adopt this solution for attracting tourists; from this point of view some well-known examples of companies from tourism and hospitality are Contiki Holidays, Geckos Adventures, Legoland Florida Resort, West Palm Beach Zoo, etc.; many known cities around the world as well as DMOs adopted different personalised versions of Pokémon Go to attract tourists.

c. Gamification

Gamification was defined as "a process of enhancing services with (motivational) affordances in order to invoke gameful experiences and further behavioral outcomes" (Hamari and others (2014).

Gamification solutions offer a set of basic features that include: dashboards, CRM integration, mobile applications, social media, API (application program interface), analytics, leader boards, website widgets, e-commerce integration, Point-of-Sale Systems integration, cloud platforms, social media integration, collaboration tools, mini games, etc.

The market of gamification solutions is marked by big players, very well-known and with an extended offer dedicated to all industries, including that of tourism and hospitality; well-known companies in this field are *Badgeville* (badgeville.com), *Bigdoor* (bigdoor.com), *Bamboo* (manumatix.com), *Gigya* (gigya.com), *Keas* (keas.com), *Pluck* (demandmedia.com).

Due to the fact that the software industry was very prolific in the development of gamification solutions dedicated to Hospitality/Entertainment/Travel industry, on the specific market we can also find providers of gamification solutions and platforms belonging to the low-end and average-end pricing categories; thus, in the above mentioned categories there are solutions such as: *GamEffective* (http://www.gameffective.com/), *Playful Shark* (http://playfulshark.com/), *VY Engagement Platform* (http://www.vyify.com/), *All Digital Rewards* (http://alldigitalrewards.com/), *Funifier* (http://www.funifier.com/), *SoInteractive* (http://www.sointeractive.co/), *Pug Pharm* (http://www.pugpharm.com/), *LaunchFire* (http://www.launchfire.com/), *The Brand Club* (http://hooptap.com/), *Preferred Patron* (http://www.preferredpatron.com/), M*ass Mobile* (http://www.massmobileapps.com/), *Belly* (https://www.bellycard.com/), *FiveStars* (http://www.fivestars.com/), *Bunchball* (http://www.bunchball.com/), *LevelUp* (https://www.thelevelup.com/); we must underline the fact that these solutions represent a good alternative for tourism companies that wish to initiate the adoption of gamification without important financial efforts.

All these applications build up a general image of the solutions offered by the software industry to the tourism industry during the last years and that include a set of the

most innovative software tools, namely mobile applications, games and gamification; these can be evidently considered as generic categories which, on their turn, have specific sub-categories.

3. CONCLUSIONS

From a generalist perspective, the aim of sustainable tourism is to ensure that its development brings positive experiences to local communities from tourism destinations, to the providers of tourism services, tourism companies as well as to the direct beneficiaries of these services, the tourists. Starting from these considerations, we can conclude that these requirements can be reached with the use of mobile applications, games and gamification platforms in the following ways:

- For the local community at the destination - adopting these innovative tools brings important benefits because they put forward and harness multiple valences of the location (historical, cultural, etc.); all these can be reflected in direct benefits such as attracting financial resources, increase in the level of employment of local work force, exploitation of local products, etc.;
- For tourism companies - the adoption of these solutions generates the augmentation of the attraction level of the tourism offer, attracting and engaging a higher number of clients and developing their loyalty by offering them some enjoyable interactive experiences;
- For tourists - beside the enjoyable experience obtained by using these solutions, tourists receive continuous support in their experience as a tourist, interactivity, information and education to increase their responsibility for the environment and the cultural and historical heritage of the world.

Thus, we consider that the adoption of these software solutions by tourism companies, independently or as a mix of them, can generate an important support in the sustainable business development process, providing sustainability results that can cover the ecological, social and economic triad, for them as well as for all their business partners.

Limitations

The very high number of solutions in the mobile apps, games and gamification categories made it impossible to cover all of them in an ample study, the present study being carried out at a general level; but, we consider that its results can be used to extend the study for other industries, identifying and highlighting common points or specificities.

REFERENCES

Appbrain (2017), https://www.appbrain.com/stats/android-market-app-categories, accessed in March 2017

Cranmer Eleanor, Jung Timothy, Dieck M. Claudia tom, Miller Amanda (2016), *Implementing Augmented Reality to Increase Tourist Attraction Sustainability*, Perspectives on Business Realities of AR and VR Conference, 27 April 2016, Dublin, p:1, available:https://e-

space.mmu.ac.uk/610834/1/Implementing%20Augmented%20Reality%20to%20Increase%20Tourist%20Attraction%20Sustainability.pdf

Digitaltrends (2017), http://www.digitaltrends.com/mobile/what-is-augmented-reality-iphone-apps-games-flash-yelp-android-ar-software-and-more, accessed in December 2016

Esa (2017), http://www.theesa.com/article/tourism-video-game/, accessed in February 2017

Espoto (2017), http://www.espoto.com/en/tourism-use-cases, accessed in January 2017

Farhat Tariga Avinanta and Senjay Remi (2013), *Design An AR Application In Finding Preferred Dining place with Social Network Capability (ARafeps),* Advanced Computing: An International Journal (ACIJ), Vol.4, No.4, p:1-16, http://airccse.org/journal/acij/papers/4413acij01.pdf

Gamesandtourism (2016) http://gamesandtourism.com/, accessed in December 2016

GroupTrav (2017), http://grouptravelleader.com/group-games/, accessed in February 2017

Hamari J., Koivisto J., Sarsa H. (2014), *Does Gamification Work? - A Literature Review of Empirical Studies on gamification,* 47th Hawaii International Conference on System Science, no. DOI 10.1109/HICSS.2014.377, pp. 3025-3034, 2014, p 3026, http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6758978

IISD (2017), https://www.iisd.org/program/economic-law-and-policy/, accessed in January 2017

IMobDev (2017), https://www.imobdevtech.com/Blog/top-advantages-of-mobile-apps-for-travel-tourism-industry/, accessed in March 2017

ITU (2017), https://www.itu.int/en/sustainable-world/Pages/default.aspx, accessed in January 2017

Myswitz (2016), http://www.myswitzerland.com/en-us/apps-panoramas.html, accessed in December 2016

Newzoo (2017), https://newzoo.com/insights/articles/global-games-market-reaches-99-6-billion-2016-mobile-generating-37/, accessed in January 2017

Statista (2017), https://www.statista.com/topics/2704/online-travel-market/, accessed in March 2017

Statista1 (2017), https://www.statista.com/statistics/270291/popular-categories-in-the-app-store/, accessed in February 2017

SuperData (2017), https://www.superdataresearch.com/market-data/market-brief-year-in-review/, accessed in February 2017

Sust1 (2017), ttps://sustainabledevelopment.un.org/content/documents/4119I.LELONEK_HUSTING_UN%20Expert%20meeting_Final.pdf, accessed in January 2017

Sustscale (2017), http://www.sustainablescale.org/AttractiveSolutions/SustainableBusinessPractices.aspx, accessed in January 2017

Tech (2017), http://whatis.techtarget.com/definition/business-sustainability, accessed in January 2017

Techop (2017), https://www.techopedia.com/definition/24261/mobile-games, accessed in January 2017

To5mac (2017), https://9to5mac.com/2016/08/18/android-ios-smartphone-market-share/, accessed in January 2017

Trekksoft (2017), https://www.trekksoft.com/en/blog/7-travel-trends-for-2017-that-will-drive-the-global-tourism-industry, accessed in February 2017

Trekksoft1 (2017), https://www.trekksoft.com/en/blog/travel-tourism-stats-2016, accessed in January 2017

UNWTO (2017), http://sdt.unwto.org/content/about-us-5, accessed in February 2017

Visitapps (2016), https://www.visitapps.com/our-solutions/packages/, accessed in December 2016

WTTC (2017), https://www.wttc.org/research/economic-research/economic-impact-analysis/, accessed in March 2017

Zornitza Yovcheva, Buhalis Dimitrios, Gatzidis, Kent Christos John (2012), *Overview of Smartphone Augmented Reality Applications for Tourism*, e-Review of Tourism Research (eRTR), Vol. 10, No. 2, 2012, pp:63-66, p:64, http://ertr.tamu.edu/content/issues/volume-10-issue-1-3-2012/volume-10-issue-2-may-2012-special-issue-enter-9/

AN EMPIRICAL ANALYSIS OF THE ROMANIAN TECHNOLOGICAL AND ECONOMIC DEVELOPMENT PARADIGM EVOLUTION. HOW MUCH THE PARADIGM REALLY CHANGES?

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Abstract

Romanian economy has experienced numerous, massive and structural transformations during the last 25 years of transition and achieving the standards for a free and well competitive market economy. On a short analysis, it may be identified at least 4 periods of economic transformation which has designed special functional economic paradigms. The recent evolution of the economies proves that a domestic economy as Romanian is greater exposed to the crisis that it was before. The analysis of the Romanian technological and economic development paradigm evolution during the last period represents a significant challenge which needs a proper approach in order to be well understood and evaluated.

The main of the paper is to design an empirical analysis of the Romanian technological and economic development paradigm evolution from a larger perspective by using the most relevant economic indicators as econometric variables. In this context were considered for realizing the quantitative analysis and qualitative correlations the following economic variables: share of different economic branches in GDP, employment, GVA, labour productivity per hour worked, intermediate consumption, net investments, by activity of national economy, tangible fixed assets, resource productivity, values of imports and exports. In order to determine the possible correlations between GDP and all the factors and variable involved it was used the unifactorial linear correlation coefficient The choice in using this methodology was made taking into consideration that it can offer possible explanations in understanding the evolution of the Romanian technological and economic development paradigm during the analyzed period.

The results obtained during the research confirm that the evolution of the Romanian technological and economic development paradigm is circumscribes to the specific phenomenon of post-communist transition economies who have experienced various economic policies in their quest to achieve a functioning market economy.

Keywords: transition, economic paradigm, technological development, investments, economic productivity, technical efficiency.

AN ECONOMETRIC APPROACH OF THE ECOLOGICAL FOOTPRINT IN EU COUNTRIES

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Abstract

Economic growth accelerated by technological progress has generated an unfriendly human behavior towards the environment, an abusive use of natural resources provided. All these conducted to an increase in pressure of human activity on the natural environment, accelerating its degradation.

In this context, developing a methodology for quantifying the negative impact of human activity on the environment - centered on the concept of "Ecological Footprint" - amplifies its importance.

Currently, the indicator shows that mankind uses resources of 1.6 planets Earth to produce the goods and services needed in a year, and the Living Planet Index shows a decline in biodiversity by 58% during 1970-2012. According to the Living Planet Report 2016, in order to obtain all goods and services required, the European Union uses resources of 2.8 planets Earth, occupying second place - after North America. At the same time, Romania has - according to the same report - the smallest ecological footprint of the EU.

The paper analyzes the variability in time and space of Ecological footprint, Biocapacity and Biocapacity deficit / reserve for EU countries, in order to identify the main behavioral patterns, taking into account the main components and determinants of ecological footprint. Data processing methods used in the paper include multiple regression, principal component analysis and application of nonparametric statistical tests.

Keywords: *Ecological Footprint, Biocapacity, regression model, nonparametric test, principal component analysis.*

THE NECESSITY OF DEVICE SECURITY FOR BUSINESSES

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Abstract

The implementation of security solutions cost a lot of time and many resources, being a difficult process to apply in practice. In the modern world of business marked by the rapid rhytms, time is the most precious asset. From this reason „Security as a Service/ represents the best mode of assuring protection. For the final user, it should be automatic, transparent, trustworthy, „always-on" and be up-to-date with the latest technologies, whilst this means the administrators have a political based management, centralised management of a widely distributed user database and immediate alerts.

In present days, high mobility of humans and data have become essential for business, same for the need of widely spread security solutions which can keep up with the mobile technology. Devices become smaller and more personal: desktops turn into laptops, laptops turn into PDAs. A new generation of wireless links is developed to be able to connect a diverse range of devices, which are „always-on" – ready at any moment to receive, to transmit, to process or negotiate with other devices in every part of the world. These changes are growing dramatically the demands with regards to the IT security in corporations. Until recently, security solutions related to gateways were used to assure network protection from company offices and create secure domains in which the employees could access information. Perimeter protection (protection at a physical level) has a very important role in assuring the security of a company, but this loses efficiency when the physical limitations are faded and the technologies are wireless. This paper presents a few ideas about security and how companies should prepare for this world of growing mobility.

Key words: security solution, business, technologies, companies

INFORMATION TECHNOLOGY - A VITA RESOURCE IN AN ORGANISATION

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Abstract

Information techology (IT) is a vital resource of organisation. IT influences strategic management of organisatkwr in the increasing operaţional and strategic organisation efficiency. IT is an investment for the organisation. IT implementation is achieved in a ierarchy, by the new local use, new internai integration, new process design, new organisational network and new organisation task.

Increasing demand for integrating network management tasks under an enterprise management system determines increasing needs for the distribution the management tasks across different stations and locations. Distributed management separates management responsibilities into domains of influence instead of maintaining a strictly hierarchical management system.

The increasing capabilities for the exchange of information between management systems at peer level owe much not only to the adoption of open standards.

Most of major players in the network management area have been making very definite moves to widen their management capabilities to encompass the systems environment. With the boundaries between systems and networks becoming increasingly blurred, their integrated management is seen as a vital area to address. Desktop Management Interface (DMI) defines how systems management information is presented to management systems.

The trend is the support and integration of handheld devices (PDAs, palmtop devices, cell phones, etc) into the management architecture. The growing popularity and versatility of handheld devices introduces a new level of management needs for today's network environment. Network users, regardless of department, are continually finding new applications for these devices.

Another key area of development includes service level management. As the concept of business-centric management becomes more prevalent, it will be providing some type of service level management. The ability to measure and monitor network service performance is several years old, but it has taken some time and redesigh to integrate the data properly into the overall management data of the network.

This proactive approach enables the network administrators to identify potenţial problem areas before they result in performance degradation or network downtime. Reports identify a host of performance metrics, pinpointing chronic problem areas and offering insight into how the various network services are being utilized.

Key words: information techology, management, department, service level