

OBSTACLES TO CROSS-BORDER COOPERATION – CASE OF CROATIA AND HUNGARY

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Abstract

The focus of this paper is to identify most significant obstacles that hinder bilateral trade between Hungary and Croatia and propose solutions for improvements by using the gravity models, precisely the Newtonian model of gravitation. The results of the research show that in spite of interest for cross-border cooperation being expressed by the stakeholders from both sides of the border, Somogy County and Virovitica-Podravina County belong to less developed, deprived rural areas of Hungary and Croatia. The key weaknesses for cross-border cooperation include lack of transport connections and language barrier, while strengths reflect in entrepreneurial spirit and opportunity to apply and implement joint entrepreneurial projects financed by the European Union (EU) funds.

Keywords: *Cross-border cooperation, Croatia and Hungary, gravity models, entrepreneurship, transport infrastructure, EU funds*

1. INTRODUCTION

When considering bilateral trade, often the crucial question is what trade intensity shall be considered as appropriate or "normal". It has been known since the work of Tinbergen (1962) and Poyhonen (1963) that the size of bilateral trade flows between any two countries can be approximated by a law called the gravity equation which originates from the Newtonian theory of gravitation. The Isaac Newton's gravitational model states that the attraction force between two objects is proportional to the product of their masses and inversely related to the (square of) distance between them. Similarly, the gravity model of bilateral trade, in its most basic form, starts from the assumption that trade between country A and B is proportional to the product of GDP (Gross Domestic Product) A and GDP_B and inversely related to their distance. Other explanatory variables that are often used are alternative measures of size such as population while the "proximity" variables may include language or cultural proximity, existence of common borders, and membership in regional trade agreements.

Initially, the gravity model was criticized as lacking respectable theoretical foundations and thus being only an empirical model expressing relationship between the size of economies, their distance and the amount of their trade. First models of bilateral trade were based on the Ricardian model and the Heckscher-Ohlin (HO) model. While Ricardian model takes into account differences in technology across countries to explain trade patterns, HO model relies on differences in factor endowments among countries. Anderson (1979) was the first to employ the product differentiation by country of origin assumption, commonly known as the "Armington assumption" (Armington, 1969). This approach was also adopted by Bergstrand (1985) who showed that gravity model corresponded to the model of trade based on monopolistic competition developed by Krugman (1980), incorporating "border effects." That requires prices of traded goods to differ among countries. Also, Deardroff (1998) claimed that the gravity model could arise from traditional trade theories, conciliating thereby both the old and new theories.

Recent research concerning the theoretical background of the gravity model has been highlighting importance of formal trade barriers, transport costs and transaction costs in understanding the patterns of bilateral trade flows. With respect to the role of transport costs in the bilateral trade, Anderson and van Wincoop (2003) highlighted that bilateral trade is determined by relative trade costs, that is the propensity of country *A* to import from country *B* is determined by country *A*'s trade cost toward *B* relative to its overall "resistance" to imports (weighted average trade costs) and to the average "resistance" facing exporters in country *C* (Anderson and van Wincoop, 2003). However, formal trade barriers such as quotas, tariffs and subsidies, and transport costs explain only part of the resistance to international trade. James E. Rauch (1999) refers to common language, colonial links and geographical proximity as factors enabling business contacts, because they increase bilateral familiarity and decrease trade barriers. Additionally, Wei (2000) states that insecurity of property and contract enforcement imposes high costs on trade while Anderson and Marcoullier (2002) have made point that poor institutional environment constrains trade far more than tariffs do.

Incorporating the theoretical foundations of the gravity model into recent practice has led to more precise and accurate estimations and interpretations of international trade flows while gravity model proved to be the most useful empirical framework for understanding the trade flows. However, several problems related to the gravity model empirical application still remain unsolved (Herrera Gomez, 2013).

Cross-border cooperation has lately been in focus of many disciplines while in economics, the so-called "border economics" has been more concerned with the effects of borders or frontiers on economic transactions. For example, Ratti (1993) pointed out that open borders become "spaces of contact" unlike previously being perceived as "lines" or "barriers". In this context, the European Union and its efforts to promote cross-border cooperation is the most successful example of how internationalization of institution-building can contribute to removing barriers between regions. The importance of studying the dynamics of economic and territorial development in the cross-border spaces along the border between neighbouring countries can be observed in the example of France and Spain cooperation (Feliu et al., 2013).

The empirical evidences show that cross-border cooperation is a promising strategy to exploit opportunities in border territories. In most cases, the initiative to start cross-border cooperation is taken by local and regional authorities in the attempt either to create links with global arenas or to mobilise additional resources offered by supranational and international bodies. There is a wide range of cross-border regions that have emerged around the world. As a result of the erosion of border barriers and convergence of political and economic conditions, more than seventy cross-border regions across the EU have been formed and operating under names such as *Euroregions* or *Working Communities*. The term Euroregion

or Working Community refers to a form of cross-border cooperation between municipalities and regions across the border in more or less formalised organisational arrangements (Oviatt, and Philips McDougall, 2005). Furthermore, the municipal autonomy gained by the Euroregions has allowed them to exploit opportunities related to cross-border cooperation. Such integration is based on the co-operative relationships between public and other bodies sharing certain interests with local and regional actors and exploiting new opportunities. In many cases this concerns applying and using special EU funds for cross-border cooperation or designing projects that benefit the neighbouring regions in both countries.

In addition to the Euroregions formed due to the establishment of the European Common Market, the rationale for cross-border cooperation can also be based on the persistence of the differences between the nation state territories such as differences in factor costs and differentials in tax levels. In this context, Scott (1999) provides an example of successful cross-border cooperation on the US-Mexican border while Sum (2002) mentions an example of cross-border activities in the Greater China (encompassing territories of Mainland China, Hong Kong, Macau and Taiwan). In both of these cases cross-border cooperation has been induced by the declaration of Special Economic Zones which allows privileged conditions for economic activities. Furthermore, Perkmann and Sum (2002) provide an example of cross-border cooperation among the so-called "Growth Triangles" in East Asia which cover considerable parts of their respective territorial states or even entire countries. Growth triangles are co-operative ventures among three or more countries (Wadley, Parasati, 2000). In addition, unlike most European cases, where initiatives for cross-border cooperation usually come from local or regional actors, Perkmann and Sum highlight the importance of central state intervention and inter-state coordination which play an important role in establishing cross-border cooperation between some regions such as the case of Maputo Corridor in Southern Africa where the interest lies in exploiting factor price differentials and other locational disparities.

Oviatt and McDougall (2005) focus on how cross-border entrepreneurial actors discover, enact, evaluate and exploit opportunities to create future goods and services. In other words, they present various forces which influence international entrepreneurship. Apart from prime factors that stimulate international entrepreneurship, such as technology, environmental influence and industry conditions, Oviatt and McDougall particularly highlight the importance of knowledge and networking. Networks help entrepreneurs in identifying international opportunities, establishing credibility and often lead to strategic alliances and other cooperative strategies. A cooperative strategy established between two companies in a cross-border region can offer significant advantages, mainly in the form of increased competences, easier market expansion and opportunities for mutual synergy and learning. In addition, the greater the ability to learn about a new host country or region business customs, culture and language, fewer are uncertainties of operating abroad.

Gravity model allows analysis of the level of bilateral trade between Croatia and neighbouring countries. Italy is one of the most important trading partners of Croatia, which comes as no surprise since it is a large country with GDP at 1,638 € billion (2011) (FocusEconomics, 2016) and also very close to Croatia, easily accessible by land and through maritime transport. In terms of trade with Bosnia and Herzegovina, Croatia proved to be overachiever with a high 13.2% of total exports destined to this country, while the 2.9% share in imports stood more in line with the gravity approach. Higher share in Croatian exports may be partly explained by very long mutual border and very low language barriers. Still, the high share seems to fall out of the explanatory power of traditional gravity models with possible impacts of rather liberal trading regime as well as compatible industrial structure and similarities in consumer preferences. To a certain extent this stands also for Croatian trade with Slovenia, Serbia and Montenegro. Slovenia had a large share in Croatian exports and

imports (close to 8% and 6% of total respectively), which is significant having in mind that Austrian economy is 8 times larger than Slovenian and that Austria has lower share in Croatian total trade.

Table 1. Main indicators and trade between Croatia and selected countries (% of total exports and imports)

Selected countries	GDP 2015 (bln €)	Distance between capital cities	Language barriers ¹ (1-10)	Exports/Imports	2013	2014	2015
Italy	1642.4	900 km	8	Exports	14.5%	13.9%	13.4%
				Imports	13.1%	14.3%	13.1%
Slovenia	38.6	143 km	4	Exports	10.4%	11.4%	12.3%
				Imports	11.5%	10.8%	10.7%
Austria	339.9	376 km	7	Exports	6.3%	6.1%	6.5%
				Imports	9.0%	8.7%	9.1%
Hungary	109.7	347 km	9	Exports	2.4%	3.5%	3.6%
				Imports	6.3%	6.6%	7.8%
Bosnia and Herzegovina	14.6	414 km	1	Exports	12.2%	11.8%	9.7%
				Imports	3.5%	2.7%	2.7%
Serbia	33.5	396 km	2	Exports	4.0%	4.9%	4.9%
				Imports	1.8%	2.1%	2.3%

Source: Central Bureau of Statistics (trade) Eurostat (GDP), Viamichelin (distance)

Note: (1) assessment by authors

Croatian trade with Hungary seems to be well below potential if compared to the other neighbouring countries (Table 1). Share of exports to Hungary in total Croatian export stood at 3.6% in 2015, as compared to Slovenia (12.3%), which has GDP 2.8 times lower than Hungary. Bosnia and Herzegovina, despite small GDP, imports 3 times more from Croatia than is the case with Hungary. Croatian exports to Serbia are even higher than to Hungary, in spite the fact that political relations with Serbia are significantly less developed than with Hungary. Although the share of Hungary in total Croatian imports is more than twice as high as in exports, still this 7.8% share in 2015 is lower than the share of Slovenia (10.7%). The fact that Hungary has higher share in Croatian imports than Bosnia and Herzegovina and Serbia can be explained by the export supply of these two countries that does not meet Croatian demand for imported goods, while Hungary produces and exports goods that Croatia also imports from other countries and Hungary received significant foreign investments in these sectors (machinery and vehicles, electrical engineering, food industry). However, overall trade between Croatia and Hungary is clearly below potential having in mind geographical proximity and the case that both countries are members of the European union.

The list of possible causes may include language barriers, lack of transport connections and insufficient number and quality of projects and institutions to facilitate long-term cooperation between the two economies. Therefore, the authors have investigated in detail which barriers hinder trade between Croatia and Hungary as the two neighbouring countries. The research was conducted through case studies of Somogy County in the Republic of Hungary and Virovitica-Podravina County (hrv. *Virovitičko-podravska županija VPŽ*) in the Republic of Croatia.

2. METHODOLOGICAL APPROACH

The results of the research presented in this article are based on the desk analysis and data analysis further backed up with qualitative methods. Desk analysis included an in-depth review of the relevant scientific literature (books, articles) and available Internet sources. For the purpose of gathering the results of the relevant scientific research, scientific research platforms were extensively searched (e.g. Google Scholar, the Web of Science, Scopus, etc.) by key words such as "the gravity model", "bilateral trade flows", "cross-border entrepreneurial cooperation", "border economics" and "Euroregions". The data analysis included collection, processing and interpretation of the trends of foreign trade flows between Croatia and the surrounding countries (Italy, Slovenia, Hungary, Austria, Bosnia and Herzegovina and Serbia). For these purposes, relevant current statistical databases published by European Statistical Office (Eurostat) and Croatian Bureau of Statistics were also used. The results of the quantitative statistical hard data search were additionally supplemented with the qualitative research methods out of which semi-structured questionnaires, in-depth interviews and structured workshops were conducted. Qualitative part of the research was conducted within the Somogy Virovitica-Podravina Strategic Economic Cooperation project (SOVISEC project), co-funded under the call HUHR/1001 of the Hungary-Croatia Cross-border Cooperation Programme in the period from 1 October 2011 to 31 January 2013 (Hu-hr-ipa.com, 2013). The inclusion of non-quantitative factors in the research, such as individual perceptions and experiences, was important for greater understanding of the cross-border entrepreneurial cooperation. Semi-structured questionnaires were disseminated to the key local stakeholders on both sides of the border (entrepreneurs, decision makers, representatives of the non-governmental sector) with response rate high enough to make relevant conclusions and recommendations. The survey was partly based on the methodology of the Executive Opinion Survey, carried out within the Global Competitiveness Report of the World Economic Forum (WEF). However, the questionnaire had to be significantly changed and adjusted in order to best suit the purpose of this research. The survey questionnaire was translated into Croatian and Hungarian and distributed by surface mail, telefax and email. The respondents were selected according to their importance for the strategic planning of the counties. Out of the total number of questionnaires sent to the selected respondents, 52 replies were collected in the Virovitica-Podravina County while in the Somogy County number of replies was 81. The questionnaire contained four main types of information: 1. Main data on the respondent; 2. Information on the most significant barriers in doing business and exporting, based on the multiple scale choice; 3. Qualitative assessment for a number of questions (21) in the range of 1 (worst) to 7 (best) using methodology similar to that of the WEF; 4. Information on the innovation level and firm strategy, by using YES/NO questions with further description required in the case of YES question.

Additionally, one-on-one interviews were conducted with the most successful local entrepreneurs and decision makers in order to propose solutions that will be as much as possible targeted at removing most significant obstacles for the cross-border entrepreneurial cooperation. Last but not least important part of the qualitative research was related to conducting structured and focused workshops for the key stakeholders from both sides of the border. The workshops were organised to stimulate participatory approach in defining key guidelines for strengthening future cross-border entrepreneurial cooperation.

3. DEVELOPMENT CAPACITIES OF THE HUNGARY-CROATIA CROSS-BORDER (CB) REGION

During the last twenty years, the Croatian-Hungarian border region underwent significant changes. Both countries have experienced transition from socialist to market economies which resulted in considerable opening of borders between them. However, while Hungarian side of the border was struggling with the difficulties of the transition process, Croatian side was affected by armed conflict which lasted from 1991 to 1995. The increase in regional disparities made certain micro regions along the common border, including Somogy and Virovitica-Podravina counties, particularly disadvantaged.

Somogy County is located at southwest of Hungary and is the largest county in Southern Transdanubia which encompasses two other counties, Tolna and Baranya. Virovitica-Podravina County is positioned in the continental north-eastern part of Croatia. Northern part of the Virovitica-Podravina County includes the river Drava, which is a natural boundary between Hungary and Croatia while mountains Bilogora, Papuk and Krndija make the border between the two countries in the south. Major parts of both counties constitute of micro-villages and small settlements, while vast majority of land is used for agricultural activities. For these reasons, both counties can be classified as rural areas.

The following Table 2 provides insight into the main data on both counties:

Table 2. Main data on Somogy County and Virovitica-Podravina County

Description	Somogy County	Virovitica – Podravina County
Population	317,947	84,586
Share of population in the total country population (%)	3.18%	1.97%
Area (km ²)	6,036	2,024
Density of population (per km ²)	53	42

Source: National Statistical offices, 2011

Demographic conditions in Somogy and Virovitica-Podravina counties cannot be described as favourable due to negative natural increase, i.e. rising number of death rate in comparison to birth rate. In addition, demographic conditions have also been deteriorating due to increasing trend of emigrations and the population ageing process. According to the latest available statistical data, population of Somogy was 317,947 in 2011 which makes 3.18% of the total population of Hungary and 84,586 in the Virovitica-Podravina County which is some 2% of the total Croatian population. The targeted cross-border area also has low population densities if compared to national averages. In this context, population density of Somogy County is 52.67 inhabitants per square kilometre which is approximately half of the country's average. Similarly, population density of the Virovitica-Podravina County is 46.2 per square kilometre which is much lower than national average of 78.1 per square kilometre.

Counties' settlement structure is unfavourable and characterized by underdeveloped urban network. Out of total number of 245 settlements which make up Somogy County, nearly half (117 or 48%) is micro-villages or small settlements which do not reach a population of 500. The most populous town in the County is its capital, Kaposvar, with population of 67,979 people which is 21.38% of the total Somogy population (Hungarian Central Statistical Office, 2011). A share of micro-villages and small settlements in the total number of settlements in the Virovitica-Podravina County is even higher, i.e. 84%. There are only three towns in the county of which Virovitica has the largest population, that is 13,609 or 16.08% of the total County's population in 2011 (Croatian Bureau of Statistics, 2011).

Somogy and Virovitica-Podravina counties can be classified as less developed areas of Hungary and Croatia. In 2013, South Transdanubia, which Somogy belongs to, had a GDP per capita of 6,900 euro which is 66.4% of the national average (European Commission, 2017). Lagging behind the national and EU-28 averages can be attributed to proximity of the counties to the state border which complicates accessibility to most of the settlements and towns for potential investors from Hungary and Croatia as well as from other countries. Additionally, in both counties there is a problem of people with no legal employment and therefore no legal income which creates a need for social support. Hence in both counties the regional concentration of poverty is increasing. Labour market in the cross-border area is characterized by inflexibility, low level of employment and high share of economically inactive population. Unemployment rate in the region has been continuously rising, especially after the start of the global recession in 2008.

Quality of transport infrastructure and position around networks of strategically important transit routes is one of the key determinants of business environment. Underdeveloped transport infrastructure and the geographical isolation issue are one of the key barriers in establishing cross-border economic links. This issue has also been highlighted by the local entrepreneurs from Somogy and Virovitica-Podravina counties. Only Kaposvár is connected to the Croatian border by the motorway M7 from Budapest, while most of other road corridors run along the edge of the region. Poor transport accessibility of Somogy County has also been expressed in the South Transdanubia Operational Programme 2007-2013 (European Commission, 2013) as an issue that needs to be tackled to set up conditions for boosting economic development. On the other hand, the strength of the Virovitica-Podravina County is its geotrafical position. This relates to direct access that the County has to transversal transport road E661 Split-Banja Luka-Virovitica-Balaton which enables transport link with the rest of Europe.

4. POTENTIALS FOR CROSS-BORDER COOPERATION

The common characteristic of Somogy and Virovitica-Podravina counties is their export orientation. This is seen from a continuous surplus of their foreign trade balance and a positive export-import ratio even though an evident decrease in the export activity has started from 2009 when global recession began. In spite of this, in 2012 Virovitica-Podravina County's export-import ratio was 160.76% (Virovitičko-podravska županija, 2013) while on the national level this indicator was 59.4% (Državni zavod za statistiku, 2013). At the same time, Somogy exports around 88% of total industrial sales which is significantly above than 55% of the national share of industrial exports in the total industrial sales. In addition, Somogy County has already set up strong entrepreneurial activities and formed entrepreneurial clusters in some sectors of the economy. However, export activities and cooperation between entrepreneurs in the cross-border region hardly exists even though cross-border in the relevant documents of both countries cooperation is specified as an important element of the overall development. For example, the National research and development and innovation strategy of Hungary for the period 2013-2020 emphasizes the importance of further increase in cross-border mobility between different sectors and different stages of value creation process in order to advance the overall development of a knowledge-driven economy. Furthermore, the Hungarian National Smart Specialization Strategy (2014) as one of its priorities sets boosting bilateral cooperation between Hungary and Croatia, particularly in environment, tourism and energy sectors (National Research, Development and Innovation Office, 2014). Hungary-Croatia Cross-border Co-operation Programme for the period 2014-2020 with the help of the EU structural and investment funds is of particular importance in boosting cross-border cooperation between the two countries in

a variety of sectors. One of the key priorities of the programme is to enhance competitiveness of the small and medium entrepreneurs through stronger cross-border cooperation links. This priority will also be supported by other priorities which will indirectly support entrepreneurs in the cross-border region through institution capacity building and specific education programmes (Hu-hr-cbc.com, 2016). On the Croatian side of the cross-border region, the most relevant document related to cross-border entrepreneurial cooperation is the umbrella County Development Strategy of the Virovitica-Podravina County. The County Development Strategy for the programming period 2014-2020 has not yet been finalized. However, it can be expected that the cross-border entrepreneurial cooperation will be included as an important development factor of the county. Such expectation can be based on the three main factors. Firstly, there is still plenty of space to utilize cross-border entrepreneurial potentials, as evident from the relevant statistical data. Secondly, partnership between Virovitica-Podravina County and Somogy County has already become a tradition as it has formally existed since 1997. Thirdly, the County Development Strategy of Virovitica-Podravina County for the period 2007-2013 highlights cross-border cooperation with Hungarian bordering regions as one of the key building blocks for its economy.

During 2012 Somogy County and Virovitica-Podravina County have adopted Joint Cross-border Enterprise Development Strategy for the period 2013-2020. The strategy provides a framework for enhancing future cross-border entrepreneurial cooperation between both counties. For this purpose, local actors have agreed upon the structure of the strategy which constitutes of the vision of the cross-border area in the future, overall aim, three specific objectives, seven priorities and a great number of interventions. Amongst all, priorities have been identified for those economic sectors for which there are most potentials for cross-border cooperation and these are agriculture, food industry, joint development of tourism products and services and joint cooperation in the industry of constructing materials (Virovitičko-podravska županija, 2013a).

On the basis of the statistical databases analysis, analysis of the relevant strategic documents and interviews with the key cross-border stakeholders, main strengths, weaknesses, opportunities and threats (SWOT) for improving cross-border cooperation have been identified. These results have been gathered and presented in the form of SWOT matrix in Table 3.

Table 3. Joint SWOT matrix of the cross-border entrepreneurial cooperation between Somogy County and Virovitica-Podravina County

STRENGTHS	
<i>Somogy County</i>	<i>Virovitica-Podravina County</i>
Drava area has a high biodiversity rate and is a habitat to endangered flora species	Favourable geotrafic position
Hilly and forested areas of the county have a good potential for eco-tourism development	Natural conditions and experience in agricultural production, wood industry and food industry
High quality of tourism services in the area of Lake Balaton	Newly built enterprise zones
Strong entrepreneurial activities	Earmarked funds for joint development of selective forms of tourism products and services
Established clusters in some sectors of economy	Good County support to entrepreneurial development
Established institutional framework for regional enterprise development	
WEAKNESSES	
Unfavourable structure of settlements	Insufficiently developed entrepreneurship
Depopulation in the border areas	Poor investment climate
Underdeveloped infrastructure	Lack of investments and modern technologies
Insufficiently developed road routes to Croatia	Lack of entrepreneurial cooperation with Hungary
Somogy County is one of economically less developed regions in terms of national and international standards	Language barrier
Unemployment rate is exceeding national and EU-28 average	Insufficient support from local government and relevant local and regional institutions responsible for
Discrepancies between educational system and labour market	
Lack of communication and cooperation with entrepreneurs from Croatia	
Limited access to financial resources for small and medium entrepreneurs	
Long bureaucratic and administrative procedures, high tax burden and complex tax regulations	
Deficiency of tourism infrastructure in the cross-border area Mura-Drava-Danube	
Poor tourism marketing in the region	
OPPORTUNITIES	
An ongoing road network development will enable better access to Somogy County (e.g. M9 motorway)	Joint project applications to EU funds
Unused possibilities of joint development of eco and active tourism products and services in the area of	Joint promotional activities for cross-border entrepreneurial projects on international level
Thermal and vitality tourism might serve as a new area for joint cross-border projects	Strengthening joint cross-border cooperation through the EU Strategy for the Danube Region
Joint project applications to EU funds	
Joint promotional activities for cross-border entrepreneurial projects on international level	
THREATS	
Global economic recession in the period 2008 -2015 slows down investment flows and entrepreneurial development	Instability of political regimes, burdening bureaucratic and administrative procedures, high tax burden and restrictive labour legislation in Croatia

Source: authors

Common strengths for both counties are preserved natural heritage, tourism potentials and institutional support to cross-border cooperation. Joint weaknesses relate to depopulation trends, language barrier and insufficient road infrastructure. Opportunities include joint cooperation for preparing and implementing EU funded projects in the field of strengthening entrepreneurial potentials while most significant threat lies in possible strong bureaucratic burden imposed for establishing joint cross-border cooperation.

5. RESULTS OF THE QUESTIONNAIRE ANALYSIS

In the Somogy County, out of 81 respondents, 66 or 81% were from private firms while five were from local self-government. In the Virovitica-Podravina County, out of 52 respondents, 36 or 69% were from private sector, 4 were from public sector while 5 were from local self-government. The main activity of most of the legal persons in the Somogy County is in Manufacturing (25%), additional 15% were registered in wholesale and retail trade, 14% in hotels and restaurants, 11% in construction and 8% in other services. In the Virovitica-Podravina County, 36% respondents stated that their core business is production, while 24% answered that it is agriculture, hunting, fishery and forestry. Most of respondents are small and medium companies and organisations. Out of total number of respondents in the Somogy County, 72% were micro companies consisting of 1 to 9 employees, while for the Virovitica-Podravina County this share was 43%. Hence, in our research, the share of small business entities with less than 50 employees was 91% for Somogy County and 76% for Virovitica-Podravina County. The result is similar when taking into account gross annual turnover. In this context, 65% of the respondents from Somogy County are employed in companies with gross annual turnover of less than 200,000 euros while this share in the Virovitica-Podravina County reaches the percentage of 39%. Even though this result corresponds to the overall economic structure of the both countries, some indicators used in the survey can still be biased to some extent due to differences in the structure of respondents. On the contrary, there is no significant difference in the export orientation of the companies in both counties. More than half of the respondents (who filled in this question) stated that they do not export at all. Altogether, less than 30% of firms export more than 10% of their total income.

5.1 Information on the most significant barriers in doing business and exporting, based on the multiple scale choice

The respondents were asked to rank the most significant obstacles of business conduct, exports, imports and bilateral (cross-border) cooperation (Figure 1).

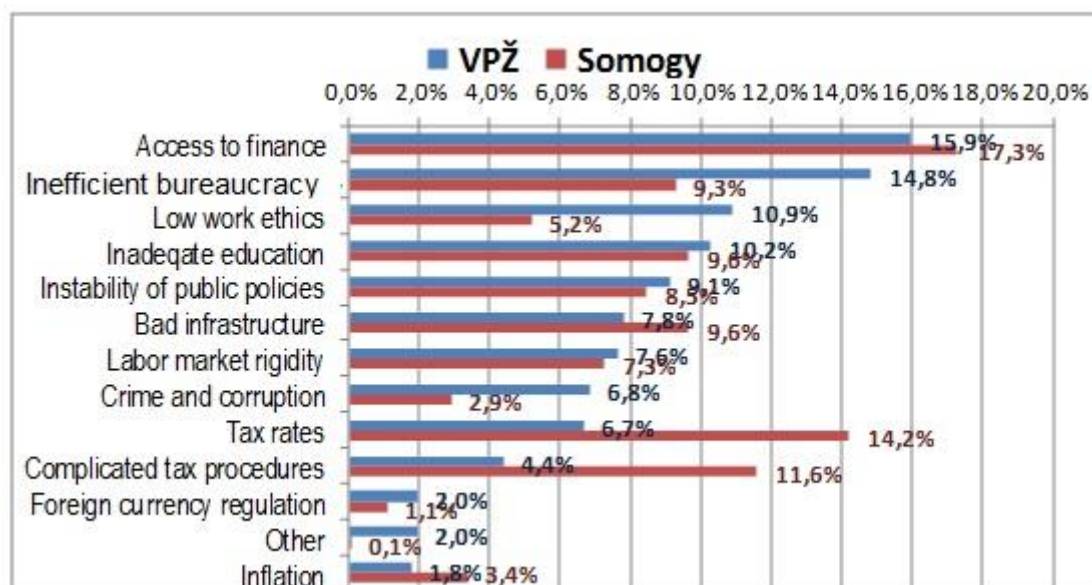


Figure 1. Most important obstacles to overall business conduct (Survey conducted by the authors)

Respondents from both counties have similarly rated all the obstacles to overall business conducts. For example, access to finance was listed as most important in slowing down overall business conduct. The main difference is that respondents from Virovitica-Podravina County listed ineffective bureaucracy and low workforce ethics as the 2nd and 3rd obstacles to overall business conduct, respectively. On the other hand, the respondents from Somogy County have put on the 2nd and 3rd position tax rates and complicated tax procedures, which have not been identified at all by the respondents from Virovitica-Podravina County. Other factors are very similar in both counties, except crime and corruption, which in the Somogy County have been perceived as an insignificant obstacle. In contrast, respondents from Virovitica-Podravina County have highlighted it as much more important factor in conducting the business. However, it was not rated among the top obstacles to overall business conduct.

On the list of most important obstacles to bilateral (cross-border) cooperation, identification of potential partners and markets was pointed out as the most important, with around one quarter of all the responses from both counties (Figure 2). From Croatian side of the border, the language barrier is seen as the most important obstacle to establishing cross-border cooperation while the Hungarian respondents see it as not so important obstacle. Knowledge on technical standards, rules and procedures is high on the list of obstacles hindering bilateral cooperation. Transport infrastructure is also considered to be important, although it is ranked lower on the list than the other obstacles. It should also be noted that a low number of respondents answered this question. However, this information can be quite important.

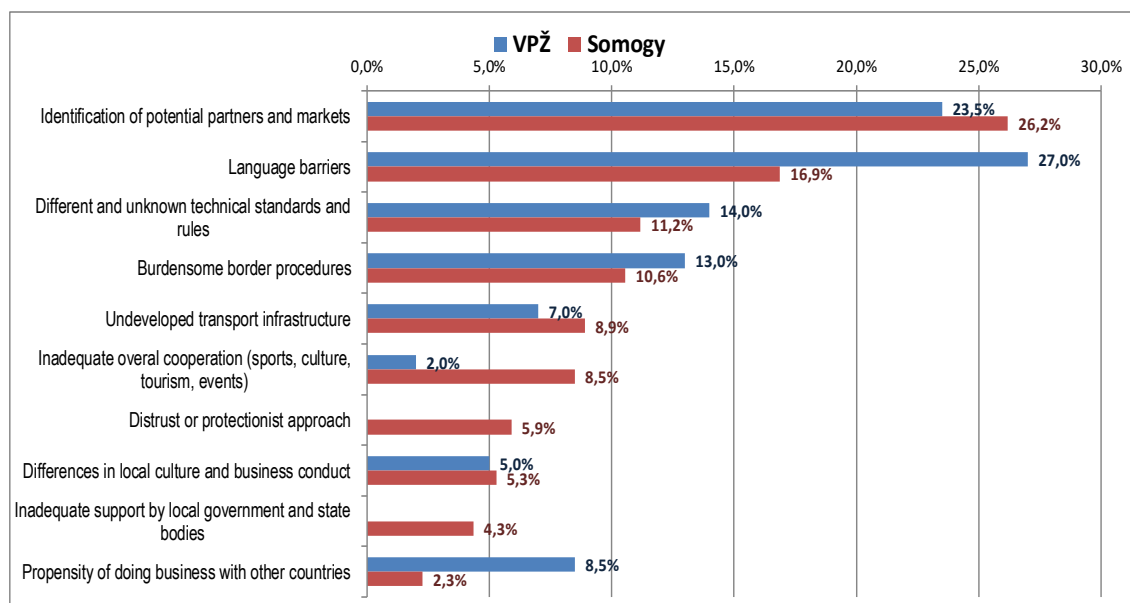


Figure 2. Most important obstacles to bilateral (cross-border) cooperation
(Survey conducted by the authors)

Numerical range questions include statements on importance of certain factors where "1" stands for the lowest level of importance, "4" for average importance and "7" for the highest level of importance. For the purpose of this analysis, the questions in the survey were grouped in four "pillars", i.e. subgroups, following the logical connections between them: 1. Basic infrastructure; 2. Business environment and access to finance; 3. Local corporate activity and cooperation; 4. Use of knowledge and technology and foreign direct investment (FDI) attraction.

The total "score" for both countries is very similar being slightly above "3", which is somewhat below the average. In other words, this means that the respondents are not contented with the competitiveness of both counties. As for "pillars" on local corporate activities and cooperation, the results were significantly above the total score, especially in the Somogy County though they were still below the satisfactory level. Respondents in the Somogy County also gave higher score for the use of knowledge and technology, supported by FDI, while in the Virovitica-Podravina County the volume for this "pillar" was equal for the total score. As stated in the survey, business environment and access to finance represent a strong limitation for the success of business, especially in the Somogy County, with a low score of 2.3. In the Virovitica-Podravina County this score was the lowest of all four pillars (2.8). Development of basic infrastructure is also not satisfactory, especially in the Somogy County (2.7).

Reasons for such outcome can become more perceptible if the "pillars" were separated into survey indicators, i.e. questions respondents were asked to fill-in (Figure 3).

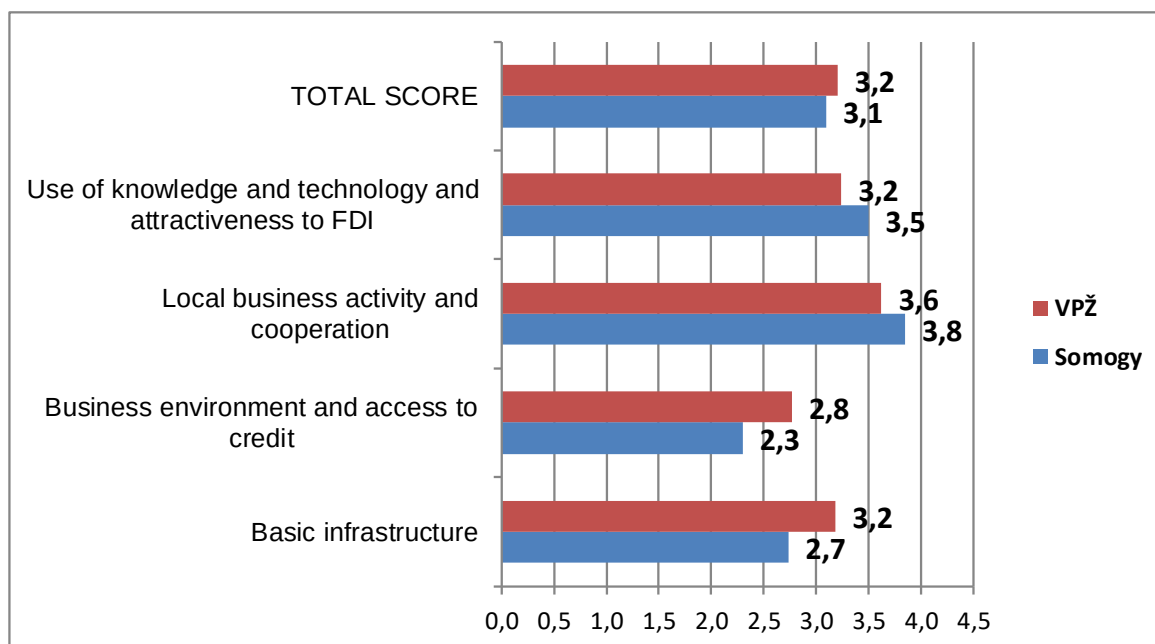


Figure 3. Average value of the 4 "pillars" (Survey conducted by the authors)

Amongst questions on basic infrastructure, respondents from both counties gave highest scores to the total infrastructure quality (Figure 4). In the Somogy County, quality of road and railway network was perceived as very low. Accessibility in regards to tourism in the Somogy County was rated somewhat better than in the Virovitica-Podravina County, which implies low connection of both counties to the key motorway routes.

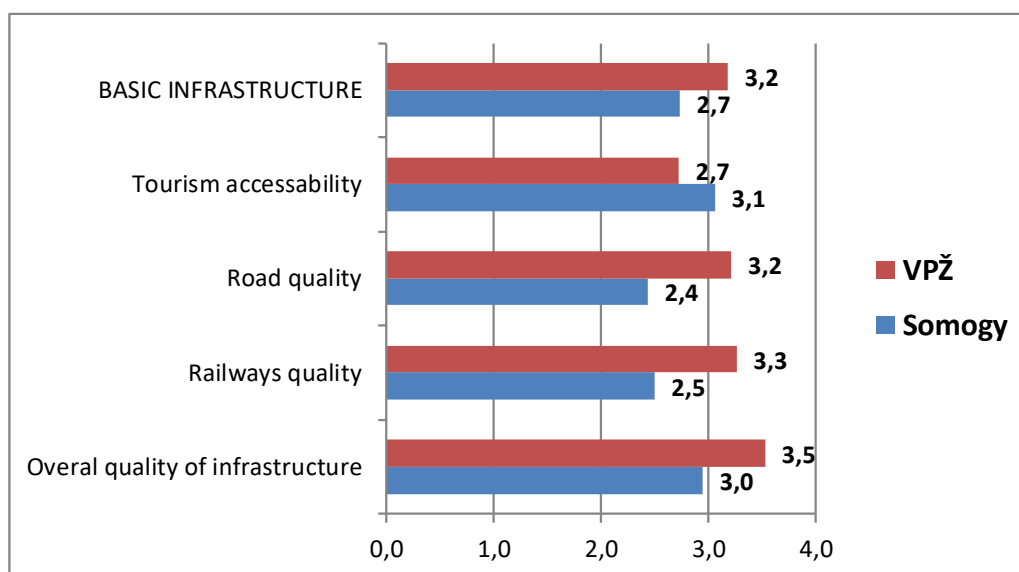


Figure 4. Basic infrastructure (Survey conducted by the authors)

Regarding business environment and access to finance, the respondents rated quality and accessibility to industrial zones and business incubators with best scores, or specifically 3.5 in the Virovitica-Podravina County and 3.2 in the Somogy County (Figure 5). Access to loans, especially venture capital is doubtlessly the biggest barrier in the cross-border business cooperation. Contrary to expectations, Hungarian respondents rated specific questions with a lower rate than those from Croatia, even though financial markets have improved since Hungary joined the EU.

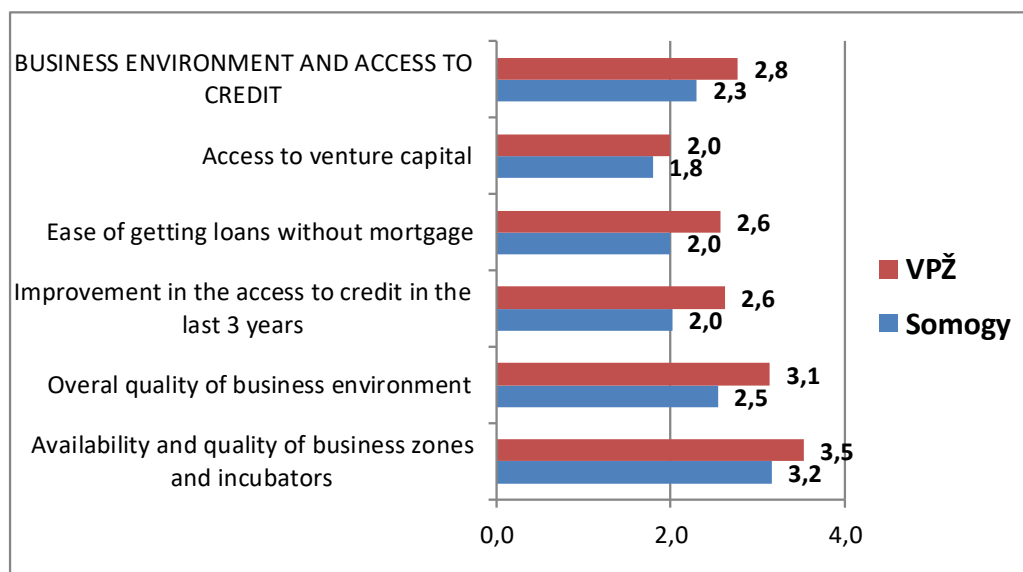


Figure 5. Business environment and access to finance (Survey conducted by the authors)

Respondents from both counties have similarly rated local corporate activities and cooperation, which implies satisfactory availability of local suppliers, including trainings and consultant services (Figure 6). On the other hand, overall corporate activities and operation of clusters have been rated as fairly low. It should be stressed that local market competition has been seen as more important by the Hungarian respondents, which is a consequence of the EU membership because it provides competitive pressure to local entrepreneurs and works as a strong stimulus to increase competitiveness on the county level.

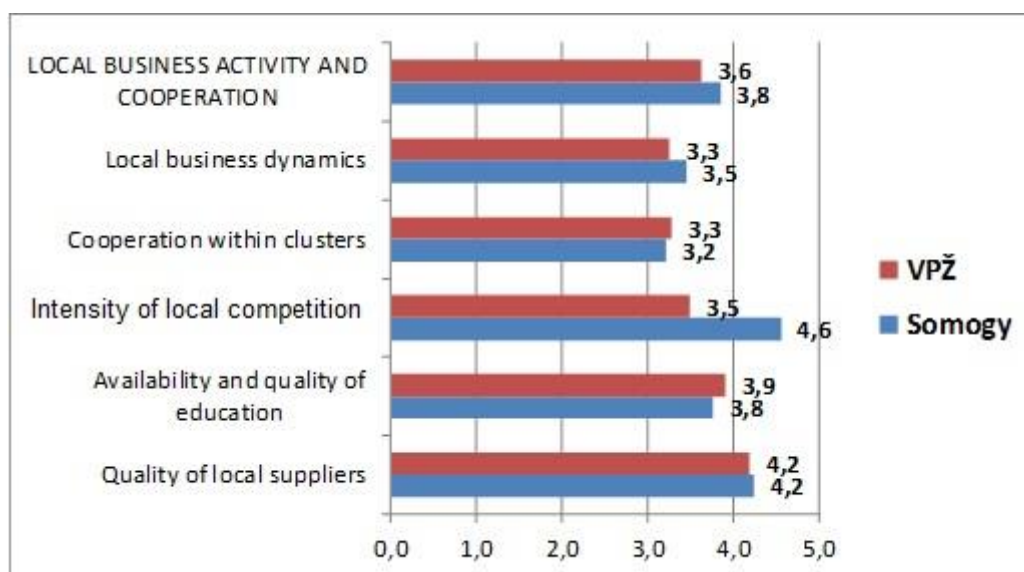


Figure 6. Local business activity and cooperation (Survey conducted by the authors)

Among the group of questions on the use of knowledge and technologies (including attraction of FDI as a source of new technologies), intensity of using the Internet for business purposes has received the highest average grade, almost identical in both counties (4.8) (Figure 7). This indicates potentials for using information and communication technologies in stimulating cross-border cooperation. The worst average grade in the Virovitica-Podravina County was given to legal framework as a stimulus for attracting FDI (2.5) while in the Somogy County the worst score was given to matching education with needs of competitive

economy. The most evident difference between the two counties is in the use of FDI to improve the level of technology use. Even though the score of 3.7. in the Somogy County cannot be considered as satisfactory, the score of 2.7 in the Virovitica-Podravina County shows that FDI hardly participates in bringing new technologies to the county.

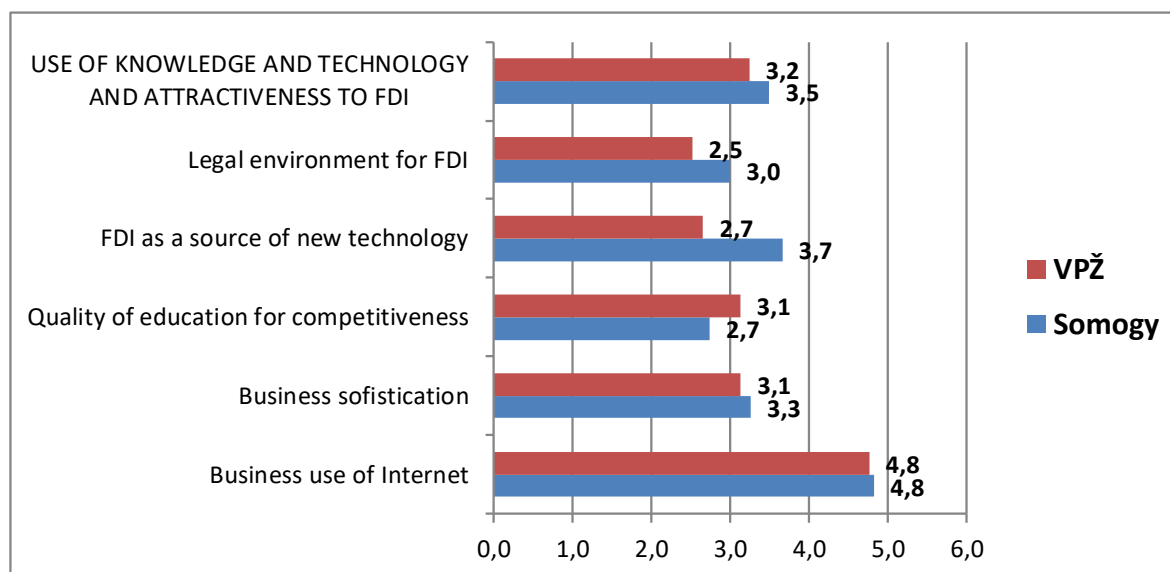


Figure 7. Use of knowledge and technology and attractiveness to FDI (Survey conducted by the authors)

6. CONCLUSION

The results of the conducted research have partly confirmed theoretical findings of gravity model of bilateral trade. While certain factors such as cultural similarities have been positive for the level of cross-border cooperation, most of other variables like geographical proximity and low transport costs have proven to have very little or no effect on the level of cross-border cooperation between the entrepreneurs from the Virovitica-Podravina and Somogy counties. The earliest research on gravity model of bilateral trade have highlighted geographical proximity as one of the key positive determinants for the level of cross-border cooperation (e.g. works of Tinbergen and Poyhonen). However, in the case of the Virovitica-Podravina and Somogy counties, this variable has not had significant effect on cooperation between entrepreneurs from the cross-border region. One of the reasons for this lies in poor transport connections between the two counties. Therefore, economic revival of the cross-border region needs to be supported by investments directed at improving transport links between Somogy and Virovitica-Podravina counties, mainly in road infrastructure and river connections over the river Drava. The fact that Hungary and Croatia are full members of the EU and thus can benefit from the EU single market has not been a stimulus for improving cross-border cooperation. This is contrary to the theoretical research conducted within the "border economics", which highlights open borders between regions as an important prerequisite for joint cooperation (Ratti, 1995). On the other hand, barriers such as language differences and unfavourable institutional environment have proven to be the most important disabling factors for cross-border cooperation (Rauch, Anderson, Marcoullier). Language barrier has shown to be the strongest obstacle for boosting cross-border cooperation between entrepreneurs from Virovitica-Podravina and Somogy counties, as is evident from the survey conducted within the research. Moreover, the language barrier between these two counties is so powerful that it abolishes positive effects of geographical proximity and the EU single market. Similarly, poor institutional environment (financial and administrative) proves the findings of theoretical research. Half of the survey respondents rated difficulties related to

market expansion and finding business partners as the greatest barrier for cross-border business cooperation. This implies that there is significant scope for the improvement of institutional support in the cross-border region, mainly in bringing together the entrepreneurs from both sides of the border and lowering administrative and financial burden in fostering their cooperation. Setting up favourable institutional environment and diminishing language barrier are thus the two key prerequisites that need to be met in order to exploit full potentials of the cross-border cooperation between the entrepreneurs from Virovitica-Podravina and Somogy counties. In the context of boosting entrepreneurial cooperation between Hungary and Croatia, the greatest expectations lie in possibilities of utilizing EU funds. In the EU financial framework 2014-2020 around 10 million euros have been earmarked to support development of cross-border entrepreneurial cooperation between Hungary and Croatia. Most of these funds are planned to be allocated for joint product and service development, technological improvements and common marketing. Readiness to utilize those funds will significantly affect exploitation of cross-border entrepreneurial potentials and level of overall quality of life in the cross-border region.

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