

Role of self-efficacy in influencing entrepreneurial behavior at universities

Abstract

Entrepreneurial behavior has become a prerequisite of any economic development, and educational institutions are increasingly called upon to provide better educated enterprising individuals who will either act as entrepreneurs, or will be able to manage their careers and lives in an entrepreneurial way. In order to define the impact that self-efficacy has on the development of entrepreneurial behavior, an empirical research by means of a questionnaire was carried out with a sample of 324 students of Josip Juraj Strossmayer University in Osijek. Apart from the descriptive, univariate statistics, a bivariate analysis was also used, as well as a multivariate data analysis. The results of the research show that self-efficacy presents an important factor in the development of entrepreneurial behavior. There is substantial evidence that students who perceive higher levels of self-efficacy, demonstrate higher propensity for entrepreneurial behavior and a higher probability of starting their own business. The research has also proven that university teaching does not significantly improve the perception of self-efficacy in students. According to the results of this research, firsthand experience has a more important role in that. The research suggests that in order to influence entrepreneurial behavior, it is necessary to consider ways of using the potential of firsthand experience for the development of entrepreneurial behavior through supplementing university courses with experiential methods such as communities of practice.

Key words: self-efficacy, entrepreneurial behavior, teaching, competences, university

1. Introduction

Global economic crisis and slowdown in national economic growth rates all over the world urge policy makers to seek a fresh supply of new entrepreneurs. Policy makers are interested in factors that urge an individual to become an entrepreneur, ways of amplifying these influencing factors and increasing the number of potential and actual entrepreneurs in order to provide a more significant economic growth. Entrepreneurial behavior has become a prerequisite of any economic development, and educational institutions are increasingly called upon to provide better educated enterprising individuals who will either act as entrepreneurs, or will be able to manage their careers and lives in an entrepreneurial way. Throughout the world interest of graduates in entrepreneurship as a career choice is growing and many higher education institutions offer a variety of entrepreneurship programs. However, educators need a deeper understanding of how entrepreneurship education contributes to, and how effective it is in inspiring students for a career in entrepreneurship or in developing entrepreneurial competences.

Croatia is a post-socialist, south-eastern European country in transition to innovation driven society. Fostering entrepreneurship through entrepreneurship education programs has recently become a part of the national strategic agenda.

This study complements the knowledge about entrepreneurship education as it examines the impact that self-efficacy has on the development of entrepreneurial behavior. Drawing upon different conceptual frameworks from the literature on psychology and entrepreneurship,

specific hypotheses concerning the relationship between these constructs are formulated. Then the findings are discussed and the factors that influence the perception of self-efficacy in university students are examined. Finally, improvements in entrepreneurship education at universities are suggested.

2. Literature review

Understanding what compels individuals to become entrepreneurs and what the antecedents of entrepreneurial behavior are remains an important question in entrepreneurship research (Shane and Venkataraman, 2000, p.220). Nevertheless, despite decades of research, we still have only a limited understanding of the process that leads an individual to become an entrepreneur.

2.1. Entrepreneurial behavior and self efficacy

It can be accepted that, as any other kind of behavior, entrepreneurial behavior also consists of individual's actions and reactions, which present a response to the external and internal impulses. Based on the definition of entrepreneurship (Bygrave, 1991,p.28; Herron and Robinson, 1993, p. 281; Gibb and Cotton, 1998, p.67) it can be concluded that in the case of entrepreneurial behavior, these particular actions and reactions are the ones needed for the creation and recognition of opportunities, introduction of changes and creation of organizations whose aim is to make use of these opportunities and manage the increasing levels of uncertainty and complexity in the environment. Entrepreneurial behavior is influenced by following elements: demographic factors and personal characteristics, attitudes and beliefs, intentions, environment, entrepreneurial competences and education (Sedlan-König, 2012, p.146).

Social psychology and cognitive theories offer understanding of the role of some beliefs and attitudes in new venture creation. Among the factors that may influence entrepreneurial cognition, the emphasis in this paper is on self-efficacy.

Grounded in the social cognitive theory of Bandura (1986) entrepreneurial self-efficacy can be defined as an individual's confidence in his/her ability to mobilize cognitive, motivational and behavioral facilities to successfully perform entrepreneurial tasks. Bandura (1986) argued that outcomes that people expect are largely dependent on their judgments of what they can accomplish. Previously a theoretical model (Boyd and Vozikis, 1994, p.71) was developed in which self-efficacy is proposed as an antecedent of entrepreneurship intentions and behavior. An individual who perceives that he/she has competences necessary for entrepreneurial success will be more likely to engage in the behavior in that field and persist in those activities. Belief in itself does not lead to behavior, but requires the arising of intention to translate the belief into action. Self-efficacy is proposed as an important explanatory variable in determining both the strength of entrepreneurial intentions and the likelihood that those intentions will result in entrepreneurial actions. Self-efficacy has also been shown to influence individual's choice of activities, goal levels, persistence and performance (Zhao, Seibert and Hill, 2005, p.1269), opportunity recognition and risk taking (Krueger and Dickson, 1994, p. 393) as well as career choice (Bandura 1986).

2.2. Entrepreneurship education

Entrepreneurship education program is usually defined as a process of providing individuals with the ability to recognize commercial opportunities and the knowledge, skills and attitudes to act on them (Jones and English, 2004, p.416). This definition emphasizes the professional skills and "how to" knowledge that is essential for starting, managing and growing a new

business. However, changing dynamics of environment and the way economies function today have created the imperative for a broader understanding of the role of entrepreneurship education. Besides professional skills and knowledge, entrepreneurship education should foster entrepreneurial competences in every individual, as well as awareness about the benefits of entrepreneurship in the society. Therefore, universities have been encouraged to provide more substantial impact on developing and stimulating entrepreneurial knowledge, skills, attitudes and values through their programs.

Majority of previous research indicates that education can contribute significantly to the development of entrepreneurial behavior (Krueger, 2003), but on the other hand, Fayolle et.al. (2006) find that entrepreneurship training programs can also have a counter effect on entrepreneurial intentions. Particular combination of personal, perceptual and situational factors can lead to entrepreneurship education actually decreasing the level of entrepreneurial intentions. Brockner et.al. (2004) suggest that entrepreneurship education can prompt person's sensitivity to negative outcomes and force a person to apply a preventive orientation. It seems that more entrepreneurial education does not necessarily lead to more self-efficacy, more favorable attitude towards entrepreneurship and more new ventures. However, the empirical evidence has not been tested in transitional economies.

Literature review on the entrepreneurship education pedagogy reveals that entrepreneurship education should take the action-learning or experience oriented learning approach in order to increase the likelihood of effective entrepreneurship outcomes. Furthermore, the main challenge for entrepreneurship educators is to create appropriate learning environment which reflects the life world of entrepreneurs. Therefore, entrepreneurship education has increasingly adopted experiential approaches (Gibb, 2002). Learning through experience, which combines experience, perceptions, cognitions and behaviors, is seen as an innovative alternative to traditional teaching. It emphasizes the central role that experience plays in the learning process (Rae and Carswell, 2000). One way of achieving this objective is by introducing communities of practice into the university education programs.

Communities of practice (Lave i Wenger, 1991) are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. There are three elements that are crucial in distinguishing a community of practice from other groups and communities. Community of practice has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people. Secondly, in pursuing their interest in the domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other. Finally, members of a community of practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems, in short a shared practice.

3. Methodology

The objective of the empirical research that was conducted on the convenient sample of 324 students of Josip Juraj Strossmayer University in Osijek was to explore the impact that self-efficacy has on the development of entrepreneurial behavior and to examine the factors that influence the perception of self-efficacy in university students. The sample was put into three subsamples: students who regularly do sports, secondly, students who are members of students' associations¹ and finally, the control group, students who neither do sports nor are members of students' associations. The instrument used in this quantitative research was a

¹ Membership in sports clubs and students' associations have in this research been taken as examples of communities of practice.

questionnaire consisting of two parts. The first part includes eight closed questions related to the demographics of the respondents, their propensity for entrepreneurial behavior and the estimated probability of starting their own business. In the second part of the questionnaire, respondents were asked to estimate their efficiency in the following categories: market opportunity recognition, collecting, analysis and understanding of data, persuasion and negotiation, use of information technology, managing interpersonal relationships, managing finances, sales and marketing, managing stress, managing uncertainty, planning and dealing with changes in the environment. These are the competences that have been identified by several authors as fundamental for entrepreneurial success. Likert scale was used for the answers. The students also had to evaluate the influence that university teaching, membership in sports clubs and students' associations, as well as firsthand experience have on the perception of self-efficacy.

The analysis of the results included nonparametric and parametric descriptive statistics. Univariate statistics, bivariate analysis, as well as multivariate data analysis were used. A univariate analysis of variance (ANOVA) was used for the comparison of means of several groups for both dependent and independent variables. A multivariate analysis of variance (MANOVA), on the other hand, was employed for the testing of effects and interactions of several independent variables on more dependent variables.

For the purpose of this research the following hypotheses were tested:

H1: Students who perceive higher levels of self-efficacy demonstrate stronger propensity for entrepreneurial behavior and a higher probability of starting their own business.

H2: The perception of self-efficacy is higher in students who regularly do sport than in students who do not.

H3: The perception of self-efficacy is higher in students who are members of students' associations than in students who are not.

H4: University teaching does not contribute significantly to the development of self-efficacy.

H5: Doing sports and taking part in students' associations, as well as firsthand experience contribute more to the development of self-efficacy than university teaching.

3.1. Analysis and results

The results of the testing for the Hypothesis 1 (Students who perceive higher levels of self-efficacy demonstrate stronger propensity for entrepreneurial behavior and a higher probability of starting their own business) are shown in Table 1.

Table 1: Correlation of variables: general perception of self-efficacy, probability of starting a business and propensity for entrepreneurial behavior (Sedlan-König, p.214)

	General perception of self-efficacy	Probability of starting own business	Propensity for entrepreneurial behavior
General perception of self-efficacy	1.000	.390**	.466**
Probability of starting own business	.390**	1.000	.663**

Propensity for entrepreneurial behavior	.466**	.663**	1.000
** positive correlation, $p < 0.01$			

There exists a moderate positive correlation between general perception of self-efficacy and probability of starting a business ($r = .39$, $p < 0.01$), as well as propensity for entrepreneurial behavior ($r = .47$, $p < 0.01$). Students show higher propensity for entrepreneurial behavior and a higher probability of starting their own business if they feel more self-efficient, which means that the Hypothesis 1 is confirmed.

The analysis of the perception of self-efficacy follows, which will confirm or reject the Hypothesis 2 (The perception of self-efficacy is higher with students who regularly do sport than with students who do not) and Hypothesis 3 (The perception of self-efficacy is higher in students who are members of students' associations than with students who are not). For this analysis the ANOVA procedure was used. On average, in all categories (market opportunity recognition, collecting, analysis and understanding of data, persuasion and negotiation, use of information technology, managing interpersonal relationships, managing finances, sales and marketing, managing stress, managing uncertainty, planning and dealing with changes in the environment) students who are members of students' associations feel more efficient than average of the sample. The respondents in general valued their self-efficacy in managing interpersonal relationships (4.02) as the highest, and their self-efficacy in sales and marketing (3.20) the lowest. It is interesting that students who are members of students' associations (in comparison to students who do sports and control group) valued their self-efficacy in all categories, except in managing stress, with the highest grades.

The ANOVA procedure has shown statistically significant differences especially for categories of self-efficacy in collecting, analysis and understanding of data ($F = 3.882$, $p < 0.05$), sales and marketing ($F = 7.874$, $p < 0.01$) and dealing with changes in the environment ($F = 5.064$, $p < 0.01$). Scheffe's post hoc analysis has shown that students who do sports, as well as students members of students' associations have a significantly higher results in aspects of self-efficacy related to collecting, analysis and understanding of data compared to the control group, whereas in aspects of sales and marketing and dealing with changes in the environment, students members of students' associations have the highest results. Therefore, the Hypothesis 2 (The perception of self-efficacy is higher with students who regularly do sport than with students who do not) is partly accepted, whereas Hypothesis 3 (The perception of self-efficacy is higher in students who are members of students' associations than with students who are not) is fully accepted.

Hypothesis 4 (University teaching does not contribute significantly to the development of self-efficacy) was tested with the correlation analysis for particular segments, as well as general self-efficacy. As can be seen in Table 2, the lowest correlation exists for the impact of university teaching on efficacy in persuasion and negotiation, and the highest for efficacy in sales and marketing. In general, the estimation of the impact of university teaching on efficacy is a medium positive correlation. This means that Hypothesis 4 is also confirmed.

Table 2: Pearson's coefficients of correlation between different aspects of self-efficacy and estimation of influence of university teaching (Sedlan-König, p. 216)

General perception of efficacy	.35
a) market opportunities recognition	.31

b) collecting, analysis and understanding of data	.42
c) persuasion and negotiation	.21
d) use of IT	.34
e) managing interpersonal relations	.25
f) financial resources management	.44
g) sales and marketing	.54
h) work under stress	.38
i) dealing with uncertainty	.28
j) planning	.34
k) managing changes in the environment	.27

The results of the testing for the Hypothesis 5 (Doing sports and taking part in students' associations, as well as firsthand experience contribute more to the development of self-efficacy than university teaching) are shown in Table 3.

Table 3: Pearson's coefficients of correlation between general self-efficacy and estimation of influence of university teaching (Sedlan-König, p.217)

	1	2	3	4
1. General self-efficacy	1.000	.398**	.603**	.347**
2. General estimation of sports clubs'/associations' influence	.398**	1.000	.381**	.421**
3. General estimation of influence of firsthand experience	.603**	.381**	1.000	.314**
4. General estimation of university's influence	.347**	.421**	.314**	1.000
** positive correlation $p < 0.01$				

It is evident that the correlation between general impact of university with the general self-efficacy is lower (0.347) than general impact of firsthand experience (0.603) and membership in students' associations and sports clubs (0.398). Hence, they contribute stronger to perception of self-efficacy. Therefore, the Hypothesis 5 is also confirmed.

3.2. Discussion

The results show that self-efficacy presents an important factor in the development of entrepreneurial behavior. Evidence was presented that students who perceive higher levels of self-efficacy, demonstrate higher propensity for entrepreneurial behavior and a higher probability of starting their own business.

As it has been suggested that students who do sports and especially students who engage in students' associations perceive higher levels of self-efficacy than students who do not share such experience, it is suggested that during entrepreneurship education programs at the university students should be encouraged to engage in some sort of communities of practice, as in this research, doing sports and taking part in students' associations were taken as examples of communities of practice.

Furthermore, it has been established that university teaching contributes only slightly to the perception of entrepreneurial self-efficacy. It is interesting to examine which factors affect the perception of self-efficacy. Based on the research presented, firsthand experience was identified as the most powerful factor to influence the perception of self-efficacy. This implies the need for evaluation, improvement and changes in entrepreneurship education at

university level as entrepreneurial education at university level should target both attitudinal and technical level. It seems necessary to include more practical activities during formal education at the university with the aim of exercising a stronger influence on the development of entrepreneurial behavior. It is also necessary to consider ways of using the potential of firsthand experience for the development of entrepreneurial behavior through supplementing university courses with some forms of practical work and extracurricular activities. Active learning approach, in which students engage actively in the process of learning and teachers take the role of facilitators, should be employed whenever possible. Learning facts, models and techniques is necessary, but students also need to be confident that they will be able to manage entrepreneurial tasks independently once they have completed the courses. Therefore, for developing entrepreneurial behavior, instruction based purely on lectures is insufficient. Only experience based learning can provide experience of solving problems and issues. This is intended to build confidence and enable students to practice various principles in addition to learning them. If we accept the fact that university is not the only place where entrepreneurial behavior can be acquired and acknowledge the important role of informal learning, the most comfortable way to boost self-efficacy in university students and thus increase the number of enterprising individuals among students is to supplement university teaching with various forms of communities of practice. Forms of communities of practice that could be used in entrepreneurial education at universities are apart from the above mentioned: students' interests groups, creative workshops, participation in centers for learning, taking part in activities in Centers for entrepreneurship and Business incubators, etc. As a consequence, a system of monitoring, evaluation and assessment of informal learning activities has to be established.

4. Conclusion

In this research was intended to explore the impact that self-efficacy has on the development of entrepreneurial behavior and to examine the factors that influence the perception of self-efficacy in university students. Universities are very traditional and change-resistant institutions that have to realize the opportunities of influencing and developing entrepreneurial competencies and behavior. The findings of the study provide evidence that the university environment gives weak encouragement and support to that goal. University programs in general are traditionally un-entrepreneurial, and oriented toward supplying knowledge about entrepreneurship, not for entrepreneurship. Therefore, it is important that universities apply a number of different strategies to stimulate the development of entrepreneurial potential, acknowledge informal learning as an important area for development of entrepreneurial behavior and employ communities of practice as a supplement to traditional teaching practices.

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