

ENTREPRENEURIAL COMPETENCIES AND INTENTIONS: THE ROLE OF HIGHER EDUCATION

MARINA Z. SOLESVIK

ABSTRACT

The purpose of this exploratory study is to examine the influence of university enterprise programs on the development of entrepreneurial competencies and skills reported by students in Ukraine. I also aimed to explore the relationship between students' skills, competencies and entrepreneurial intentions. The survey methodology was used in this study. Primary data was gathered with the help of a questionnaire. I explored the competencies and skills reported both by students who participated in university enterprise programs and those who had not taken part in the program. A one-way analysis of variance (ANOVA) was utilised to locate the difference in entrepreneurship competencies and skills of business and non-business students. The results suggest that students who have participated in university enterprise programs report higher levels of entrepreneurship-related skills. The findings presented have implications for practitioners, policymakers, government officers who support entrepreneurs, and educators who facilitate the development of the competences of young people.

DOI: 10.23762/FSO_VOL7_NO1_1

KEY WORDS

Entrepreneurial intentions, entrepreneurial competencies, skills, youth entrepreneurship, Ukraine.

MARINA Z. SOLESVIK

e-mail: mzs@hvl.no

Western Norway University of Applied
Sciences, Norway

Introduction

Politicians in many countries wish to proliferate the number of new firms and improve their performance. New firms are a source of new workplaces and income for countries (Davidsson and Wiklund, 2001). One of the largest prospective sources of new entrepreneurs is youth (Schřtt et al., 2015). For this reason, the enhancement of entrepreneurial talents amongst young people is widely supported (Kourilsky and Walstad, 1998). Numerous courses and programs are offered to young people. These study programs are intended to in-

tensify the attention of students towards entrepreneurship, improve entrepreneurial self-efficacy, and to improve entrepreneurial skills (Krueger et al., 2000; Solesvik, 2012).

There remains a somewhat limited knowledge of entrepreneurial education in emerging economies (Parsyakh et al., 2014). The level of skills and competencies which are honed by entrepreneurial education is not completely understood. Nevertheless, there is a growing awareness of the need for a greater understanding of entrepre-

neurship (Bruton et al., 2008) and entrepreneurial education (Parsyak et al., 2014) in the emerging market context. Moreover, it is necessary to verify whether entrepreneurship theories elaborated in market economies are valid in the markets of former planning economies (Shenkar and von Glinow, 1994). Businessmen in former socialist countries operate in a unique and unfriendly institutional milieu (Tonoyan et al., 2010) characterised by a vacuum of formal institutions and sophisticated informal institutions (Puffer et al., 2010). Furthermore, entrepreneurs in emerging markets lack financial resources and score highly in human capital (Iakovleva et al., 2013). Thus, entrepreneurs in transition economies might need specific competencies that may be somewhat different from the competencies which are necessary in market economies.

Entrepreneurial competencies are related to the accomplishment of a company and its effectiveness (Man et al., 2002), and development (Colombo and Grilli, 2005). Obtaining entrepreneurial competencies is vital for businessmen. Though there is a significant body of research relating to entrepreneurial competencies (Man et al., 2002; Mitchelmore and Rowley, 2010), there are still gaps in the knowledge base. Issues relating to the competency development process relating to young people have generally been neglected. Furthermore, numerous scholars in entrepreneurship have assessed the entrepreneurial competencies in *developed* economies (e.g. Brinckmann et al., 2011; Man and Lau, 2000; Lerner and Almor, 2002; Rasmussen et al., 2011). However, there is a gap in the knowledge base relating to the specific entrepreneurial competencies of entrepreneurs in emerging economies. Capaldo et al. (2004) suggested that context shapes entrepreneurial competencies and skills. The purpose of this exploratory study is to

examine the entrepreneurial competencies reported by business and engineering students in Ukraine. The aim of the study is to analyse whether entrepreneurial education can enhance entrepreneurial competencies and skills with reference to resource-constrained and hostile environments in emerging economies. This study analyses general and specific entrepreneurial competencies with reference to the special context of the emerging economy. Guided by insights from the emerging dynamic entrepreneurial competencies perspective (Man et al., 2002), this study provides fresh insights into what competencies students acquire with reference to the dysfunctional institutional legacies in the context of the emerging economy. This quantitative study explores the following research questions: (1) What is the role of entrepreneurship courses in shaping entrepreneurial skills and competencies of students? (2) What entrepreneurial competencies and skills are associated with a higher level of entrepreneurial intentions?

A novel conceptual contribution is the exploration of links between entrepreneurship education and competencies relating to entrepreneurship. Information from 189 respondents is used to test the postulate that entrepreneurship education enhances entrepreneurial competencies and skills in an emerging market. This study adds to debates relating to the role of skills in shaping entrepreneurial intentions in emerging economies (Solesvik, 2017a; Solesvik et al., 2014). Several important competencies specific to young entrepreneurs which are linked to the particular institutional environment of Ukraine are highlighted. The study also covers a methodological gap in the research on entrepreneurial competencies related to the lack of comparative studies in the field (Man et al., 2002). This study seeks to take up this challenge by focusing both upon students who have taken

entrepreneurship courses and those who have not participated in entrepreneurship education.

Practitioners need to be aware that common enterprise competencies can be mastered in enterprise education programs. Notably, distinctive entrepreneurial competencies are more complex and less tangible. Insights from this study will enable scholars to explore the entrepreneurial competencies of a wider sample of entrepreneurs from both Ukraine and other transition countries. New knowledge will also enable policymakers to provide support for young people with more appropriate courses aimed at competency and skills development. The insights from the survey may be a useful base for entrepreneurs in emerging markets to undertake an audit of enterprise education programs offered by higher educational institutions in Ukraine.

This paper is structured as follows. Firstly, insights related to the Ukrainian context are highlighted in Section 2. Conceptual insights from prior studies that have focused on entrepreneurial competencies and skills are discussed in Section 3. Section 4 outlines the data collection and research methodology. In Section 5, the results are presented. Finally, the implications of the study for further research and practitioners are discussed, and the concluding comments are presented.

1. The context for youth entrepreneurship in Ukraine

The number of start-ups and survivals of existing businesses is context-dependent (Davidson and Wiklund, 1997; Shane, 1996). Business conditions that facilitate or hinder entrepreneurship include cultures, sub-cultures, the tax system, venture capital issues, market situations and other background factors (Hisrich, 1990). A critical review of the research on entrepreneurship in emerging economies (Kiss

et al., 2011) recommends that authors pay more attention to introducing contexts in which entrepreneurship operates, since the audience is not always familiar with different country-specific features that often are crucial to understanding the research results. Following this suggestion, I briefly introduced the context in which Ukrainian entrepreneurs operate.

Historical context. Several governments have promoted the move from a command economy to a market economy. A distinction can be made between post-socialist European countries associated with market and tax reforms which have supported a continual increase in enterprise formation and those that have promoted a short dramatic increase in enterprise formation and a subsequent decline in enterprise formation (Parsyak and Zhuravlyova, 2007). Prior to the collapse of the Soviet Union, the dominant values and the social norms during the communist ascendancy in Ukraine did not promote individual enterprise. The Ukrainian economy was highly centralised and associated with structural problems relating to large inefficient and declining state-owned organisations (Leszczynska, 2010). After the collapse of the Soviet Union, large heavy industry enterprises in Ukraine which produced military goods for the Soviet Union went into decline. Due to the reduced demand for products manufactured in large firms and structural reforms (Parsyak and Zhuravlyova, 2001), employees, particularly highly educated people in Ukraine, were 'pushed' into establishing their own businesses in the 1990s (Parsyak and Zhuravlyova, 2001). Men in Ukraine became business owners to exploit existing resources and opportunities, whilst women wanted to increase their incomes (Aidis et al., 2007). Formal institutions (i.e. laws and regulations) and informal institutions (i.e. cultural and social traditions, family values, etc.) can shape

attitudes towards enterprise (Aidis et al., 2007). To encourage economic development, the Ukrainian government introduced political and economic structural reform measures to promote entrepreneurial spirit, and the establishment of new independent owner-managed firms. The formation of new companies is perceived as a mechanism to generate wealth and jobs as well as reduce economic and social problems associated with unemployment. After the 'Orange Revolution' in 2004, a more favourable tax regime and measures to reduce administrative burdens were introduced to promote entrepreneurship. Structural reforms encourage people to accumulate and leverage skills relating to imagination, creativity, innovation and the ability to identify and exploit gaps in the market. The external environment in Ukraine is, however, still perceived to be hostile to entrepreneurial behaviour (Orlenko and Klochko, 1998). Frequent changes to laws and regulations, political instability, military conflicts, underdeveloped legal institutions and higher operating costs for new firms have, in part, led to a recent steady slowdown in enterprise formation in Ukraine. Notably, young people are less likely to engage in enterprising behaviour (Kalantaridis and Labriandis, 2004), particularly males under 30 years of age (Aidis et al., 2007). In Ukraine, less than 5% of entrepreneurs are between 18 to 28 years of age (Ukrainian Government, 2002).

Economic context. Ukraine, which was the second-largest country in the former Soviet Union, has a population of about 44 million. In terms of ease of conducting business, a survey by the World Bank (2018) ranks Ukraine 71st out of 190 economies. Ukraine is a lower middle-income country. The official statistics witness an interesting phenomenon of entrepreneurship in Ukraine. While in many developed and developing countries males are more

entrepreneurial and report start-up intentions more frequently, in Ukraine the situation seems to be the opposite: there are more female sole proprietors in Ukraine than male entrepreneurs (55% vs 45%) (IFC, 2009). Sole proprietors in Ukraine are the bulk of entrepreneurs in the country (447,500 enterprises and 998,500 sole proprietors that run active operations).

Social context. Social context can shape an individual's expectations, access to higher quality education, the ability to obtain a job, and the ability to obtain an employment position, which can promote the accumulation of financial resources and managerial, technical and entrepreneurial capabilities (Kets de Vries, 1977). In a recent study (Westhead and Solesvik, 2016), it was stressed that the context for the development of entrepreneurship in Ukraine is rather specific. Attitudes towards entrepreneurship have changed during the last twenty-five years of transition. At the beginning of the 1990s, the attitude towards entrepreneurs was rather hostile. Entrepreneurship was legally prohibited in the Soviet Union, and it took some time to change opinions among the population towards this phenomenon. Policymakers in Ukraine see entrepreneurship as a key factor in successfully achieving changes to business and the political structure.

Institutional context. Institutional context can shape laws and regulations that can either promote or retard an individual's path in entrepreneurship. Formal institutions in Ukraine are underdeveloped. In contrast to Western societies, where formal institutions are rather supportive towards entrepreneurship, in Ukraine formal institutions do not support entrepreneurship. It has also been suggested that the role of informal institutions (e.g. trust within networks and *blat*) in some post-Soviet countries, including Ukraine, is crucial in shaping entrepreneurship (Puffer et al., 2010). *Blat* refers to "an exchange of

favours of access in conditions of shortages and a state system of privileges ... blat provided access to public resources through personal channels" (Ledeneva, 1998: 37). Thus, entrepreneurs in such environments need to develop a special proficiency for building networks and/or penetrating existing closed networks and making the necessary connections in order to succeed (Kiss et al., 2011).

2. Conceptual insights from prior studies

2.1. Competence-based view of entrepreneurship

Building upon previous theoretical research, this article utilises the entrepreneurial competencies perspective (Man et al., 2002) to identify the range of competencies and skills that favours the formation of entrepreneurial intentions in the emerging market context (Solesvik and Westhead, 2012). Competencies play an important role in successful entrepreneurship (Solesvik, 2017b, 2018). Surprisingly, research on entrepreneurial competencies is rather limited (Mitchelmore and Rowley, 2010). This sub-section discusses the competence-based view of entrepreneurship. Several definitions of entrepreneurial competencies are proposed in the literature (Hoffmann, 1999). Entrepreneurial competency is defined as 'the capability of entrepreneurs to effectively face a critical situation by making sense of environmental constraints and by activating relational and internal specific resources' (Iandoli et al., 2007: 17). Furthermore, Bird (1995) defines entrepreneurial competencies as individual traits, such as specific knowledge, motives, features, self-images, social roles and abilities, which result in a venture's success. Some entrepreneurial competencies can be learned through formal education. Other competencies are tacit and depend on one individual's characteristics,

and are developed during the person's life, experience, and career (Brownell, 2006).

Entrepreneurship scholars suggest that entrepreneurial competencies are vital to business growth and success. Different competencies are needed at various stages of venture development (Churchill and Lewis, 1983). Man et al. (2002) suggest that entrepreneurial competencies are more important during the start-up phase, while managerial competencies are more significant at the growth stage. External stimuli (e.g. uncertainty (Autio et al., 2011); the business environment (Man and Lau, 2005); the social environment (Mitchelmore and Rowley, 2010) and situation (Capaldo et al., 2004) and internal stimuli (e.g. the nature of education) (Columbo and Grilli, 2005); family background in business (Basu and Goswami, 1999), and individual characteristics (Brownell, 2006) influence the emergence and development of entrepreneurial competencies. The stimuli for competency development reported by 'micro' firms and 'small' firms could be different. Furthermore, entrepreneurs can seek to develop competencies, both proactively and defensively.

However, the competence facet of this problem has received limited attention from entrepreneurship scholars. Young people might face negative stereotypes compared to experienced entrepreneurs. Thus, to overcome such stereotypes, young people should demonstrate high levels of entrepreneurial competencies. Lerner and Almor (2002) asserted that there are four main factors explaining the performance of enterprises, i.e. industrial competency, management competency, strategic planning competency, and organisational resources. The lack of these competencies among entrepreneurs represents a more serious barrier to venture performance than external obstacles that entrepreneurs face, such as difficulties in

gaining financial resources and the lack of support (Solesvik, 2013). Therefore, understanding what entrepreneurial competencies are is necessary for young entrepreneurs in the emerging market context, and how young entrepreneurs acquire and develop entrepreneurial competencies adds another facet to knowledge about entrepreneurship in emerging economies. However, research on the entrepreneurial competencies of young people is limited.

Prior work on entrepreneurial competencies has focused on developed economies (Man et al., 2002; Rasmussen et al., 2011). Yet it has been recognised elsewhere that entrepreneurship in emerging markets is different from that in developed markets (Puffer et al., 2010). Consequently, entrepreneurial competencies possessed by individual entrepreneurs in emerging economies might differ from those possessed by entrepreneurs in developed economies. In a meta-analysis of entrepreneurial competencies, Man et al. (2002) identified six areas of competencies associated with company performance, namely opportunity competencies, relationship competencies, conceptual competencies, organisational competencies, strategic competencies, and commitment competencies. These competencies were derived from studies carried out in developed economies. However, as mentioned above, entrepreneurial competencies vary in different contexts (Capaldo et al., 2004). More recent research on entrepreneurial competencies which summarised the previous studies on this subject does not take context features into account and provides a framework consisting of entrepreneurial competencies, business and management competencies, human relations competencies, conceptual and relationship competencies (Mitchelmore and Rowley, 2010; Solesvik et al., 2019). Consequently, typologies of competencies presented in these studies

are general and do not take emerging market specifics into account.

So far, not much attention has been paid to the entrepreneurial competencies which it is necessary to possess in special emerging markets contexts, where informal institutions play a more important role for entrepreneurship than formal ones do. This research aims to cover this gap in the literature pertaining to entrepreneurship and takes reflections from the institutional perspective into account to test whether entrepreneurship education in constrained and hostile environments shapes specific entrepreneurial competencies that lead to entrepreneurial intentions.

2.2. Entrepreneurship education

The influence of entrepreneurship education on the shaping of entrepreneurial intentions is the topic of several previous studies (Karhunen and Ledyeva, 2010; Kuckertz and Wagner, 2010; Liñan and Chen, 2009; Tkachev and Kolvereid, 1999). A major in business education is often positively and significantly related to entrepreneurial intentions (Karhunen and Ledyeva, 2010; Tkachev and Kolvereid, 1999). However, certain other researchers concluded that young people who studied engineering reported a higher level of entrepreneurial intentions (Kuckertz and Wagner, 2010). Moreover, some studies report that the level of entrepreneurial intentions had dropped after taking entrepreneurship courses (Oosterbeek et al., 2010). One of the reasons for such variation in intentions is related to the specifics of engineering education in both developed and transition economies. Universities in developed economies broadly encourage engineering students to select a self-employment career option. For instance, enterprise courses and venture cups are offered to engineering students. Master's degrees for engineering students in entrepreneur-

ship and innovation are increasingly developed as the standard in many countries (e.g. USA, UK, and Norway). Conversely, in Ukrainian universities (as in other universities in transition economies), enterprise programmes are proposed only to encourage business students to pursue an entrepreneurial career path. To summarise:

Hypothesis 1: *Skills and competencies acquired during university enterprise programs are positively and significantly related to entrepreneurial intentions.*

Hypothesis 2: *Students who participate in university enterprise programs report higher levels of entrepreneurship-related skills and competencies.*

3. Data collection and research methodology

3.1. Sample and data collection

The structured questionnaire was administered among business and engineering students at three universities in the city of Nikolaev in Ukraine. The data was collected in May-December 2012 at the European University, the National University of Shipbuilding, and the Petro Mohyla Humanitarian University among third-, fourth- and fifth-year students. Business students take the entrepreneurship course during their second year. However, engineering students are not given the opportunity to participate in entrepreneurship courses. The students were recognised as an acceptable population on whom to test behaviour-related theories (Tang et al., 2012). The questionnaire was designed in English, and later was translated into Russian. Ukrainian is the official language of Ukraine; however, Russian is an official regional language in the southern part of Ukraine. The questionnaire was first tested on 10 Master's students at the National University of Shipbuilding. No problems were detected. One of the authors distrib-

uted questionnaires directly to students during their classes. Participation in the survey was mandatory. Students were not asked to indicate their names; only those who wished to participate in subsequent surveys over the following three years were asked to leave their e-mail addresses and/or telephone numbers. Altogether, 250 questionnaires were distributed. 190 responses were received (i.e., the National University of Shipbuilding (n = 123), the European University (n = 46) and the Petro Mohyla Humanitarian University (n = 21)). One questionnaire was not completely filled out and was therefore excluded from the analysis. Questionnaires from 125 business students and from 64 engineering students were used. The average age of the respondents was 20.35 years of age, and 57.3% of the respondents were women. The percentage of students with parents who were entrepreneurs was 42.1%.

3.2 Sample representation

I have used databases from the three universities to check age and gender information relating to students who participated in enterprise and engineering classes. Chi-square tests suggested no significant differences between respondents and non-respondents with regard to gender and age.

3.3. Measures

3.3.1. Dependent variable

Entrepreneurial intentions, relating to the desire to become an entrepreneur, were measured with regard to the following question: have you seriously considered starting your own business? In relation to this question, students were presented with the following six statements: I am ready to do anything to be an entrepreneur; my professional goal is to become an entrepreneur; I am determined to create a business venture in the future; I have very seriously thought about starting a firm; I intend to start a firm one day; and I intend

to start a firm within five years of graduation (Liñan and Chen, 2009). With regard to each statement, a seven-point scoring system was employed, where a score of 1 suggested 'absolutely disagree', 4 suggested 'neither agree nor disagree', and a score of 7 suggested 'absolutely agree'. A principal component analysis (PCA) found that all six statements loaded on a single component with a Cronbach's alpha of 0.92. Varimax rotated component scores were computed, and this is the intensity dependent variable (Intentions).

3.3.2. Independent variables

Skills and competencies. The respondents were asked the following question: "Did the entrepreneurship module encourage you to develop the following skills?" I have used a list of fifteen skills from previous research (Westhead and Matlay, 2006) and added fifteen other entrepreneurship-related skills (Table 2). With regard to each statement, a five-point scoring system was employed, where a score of 1 suggested 'strongly disagree', 3 suggested 'neither agree nor disagree', and a score of 5 suggested 'strongly agree'. A principal component analysis (PCA) found that thirty statements were loaded on four components. The first component had a Cronbach's alpha of 0.93 (organising competencies); the second component had a Cronbach's

alpha of 0.93 (conceptual competencies); the third component had a Cronbach's alpha of 0.93 (risk-taking competencies); and the fourth component had a Cronbach's alpha of 0.88 (achievement and opportunity identification competencies).

3.3.3. Control variables

Several control variables were used, the first of which is gender (1 = female, 0 = otherwise). Gender is a significant predictor of entrepreneurial intentions, as in many countries, males report a higher intensity of intentions. The second control variable is parental self-employment. People with entrepreneurial parents are more likely to be self-employed (Solesvik, 2013). The third control variable is education major (1=business students, 0=engineering students).

4. Results

Multicollinearity was not a problem (Table 1). The hierarchical multiple OLS regression analysis was used to explore the variations in entrepreneurial intention. The models described in Table 2 are significant at the 0.001 level. Model 1 is the baseline control variable model. In Model 1 ($R^2 = 0.075$, $p < 0.01$), those individuals who had a major in business studies ($\beta = 0.25$, $p < 0.01$) and parental self-employment ($\beta = 0.15$, $p < 0.05$) reported a higher intensity of entrepreneurial intentions.

Table I. Descriptive statistics

Variables	1	2	3	4	5	6	7
1. Gender	1						
2. Parents	-.042	1					
3. Enterprise	-.580**	.161*	1				
4. Organising competencies	-.190*	.040	.311**	1			
5. Conceptual competencies	-.146	.226**	.080	.000	1		
6. Risk-taking competencies	.090	.045	-.047	.000	.000	1	
7. Achievement and opportunity identification competencies	-.182*	-.035	.229**	.000	.000	.000	1
8. Entrepreneurial intentions	-.055	.162*	.217**	.117	.200**	.272**	.162*

* Correlation significant at the 0.05 level (2-tailed). ** Correlation significant at the 0.01 level (2-tailed)

Source: Own elaboration.

Independent variables related to the entrepreneurial competencies and skills were included in Model 2 ($R^2 = 0.205, p < 0.01$) (Table 2).

Table 2. Hierarchical regression models relating to the skills of students reporting the intention to become entrepreneurs (n = 189) (a)

	Model 1	Model 2
Control variables		
Female	0.12	0.13
Parents	0.15*	0.10
Enterprise	0.25**	0.20*
Independent variables		
Organising competencies		0.06
Conceptual competencies		0.17*
Risk-taking competencies		0.27***
Achievement and opportunity identification competencies		0.17*
R_i	0.075	0.205
Adjusted R_i	0.057	0.168
ΔR^2	0.0057	0.13
F value	4.228	5.620
Sig. F change	0.000	0.000

Source: Own elaboration.

Model 2 was highly significant. The model fit improved after adding new variables. Model 2 in Table II suggests that individuals reporting high scores in terms of risk-taking competencies, achievement and opportunity identification as well as conceptual competencies and skills are more likely to have the intention to become an entrepreneur than those who report low scores in these categories. Conceptual competencies ($\beta = 0.17, p < 0.1$) had a significant and positive impact on the intention to become an entrepreneur ($R^2 = 0.205, p < 0.001$). Risk-taking competencies ($\beta = 0.27, p < 0.001$) had a significant

and positive impact on intention to become an entrepreneur ($R^2 = 0.205, p < 0.001$). Achievement and opportunity identification competencies ($\beta = 0.17, p < 0.1$) had a significant and positive impact on intention to become an entrepreneur ($R^2 = 0.205, p < 0.001$). Organising competencies are not significantly related to entrepreneurial intentions. Hypothesis 1 was partially supported.

To test Hypothesis 2, a one-way ANOVA was used, testing thirty skills and competencies reported by business and engineering students for a significant difference (Table 3).

Table 3. One-way ANOVA comparing skills and competencies by education major

Skills and competencies	Mean value			Sig
	Business	Engineers	F	
Achievement motivation	3.22	3.82	13.001	***
Communication skills	4.11	3.37	19.741	***
Decisiveness	4.02	3.43	12.147	***
Increased self confidence	3.90	3.37	10.585	***
Ability to identify high-quality opportunities	3.66	3.38	3.052	ns

Time management	3.85	3.24	12.433	***
Computer literacy	3.56	4.01	6.217	*
Project management skills	3.72	3.34	5.028	*
Practical business skills	3.52	3.10	4.300	*
Business sense	3.38	2.98	3.970	*
Ability to supervise, influence and lead people	3.53	3.26	1.925	ns
Negotiation skills	3.89	3.14	16.023	***
Ability to seize high-quality opportunities	3.77	3.27	8.229	**
Ability to be alert to spotting opportunities	3.74	3.27	7.359	**
Ability to work on my own	4.08	3.37	17.221	***
Ability to organise resources and co-ordinate tasks	3.75	3.33	5.582	*
Technical skills and knowledge	3.86	3.43	7.050	**
Ability to achieve results by organising and motivating people	3.82	3.34	7.343	**
Imagination and creativity	4.08	3.44	15.335	***
Ability to identify high-quality opportunities	4.20	3.46	18.025	***
Information collection and processing skills	4.17	3.57	14.476	***
Ability to think about and / or look for new opportunities	4.15	3.59	11.346	***
Problem identification skills	3.94	3.21	20.108	***
Ability to delegate	3.77	3.00	24.242	***
Ability to make resource allocation decisions that achieve maximum results with limited resources	3.82	3.32	9.263	**
Increased risk-taking	3.48	3.06	5.696	*
Ability to be opportunistic	4.11	3.56	12.250	***
Networking skills	4.03	3.44	12.060	***
Calculated risk-taking	3.78	3.32	8.270	**
Ability to work in a team	3.49	3.37	0.511	ns

Source: Own elaboration.

As shown in Table 2, business students reported significantly higher levels of twenty-five competencies related to entrepreneurship. Business students reported *not* significantly higher levels of three competencies (i.e. the ability to identify high-quality opportunities, the ability to supervise, influence and lead people, and the ability to work in a team). Engineering students reported a significantly higher level of achievement motivation and computer literacy than business students. Thus, it can be concluded that entrepreneurship education positively influences the development of entrepreneurial skills and competencies of young people. Hypothesis 2 was supported.

Conclusions and implications

This study has sought to reply to several recent calls in the entrepreneurship literature. First, this study is a contribution to the scarce entrepreneurship literature on emerging economies (Kiss et al., 2011; Manev and Manolova, 2010). Second, this study addresses issues in the important, but still scarcely researched, area of entrepreneurial competencies (Mitchelmore and Rowley, 2010). This paper intended to enhance the understanding of entrepreneurial competencies of young people in the emerging Ukrainian economy. Third, I wish to shed light on the role of entrepreneurship education in shaping entrepreneurial intentions. The findings of previous

research have been somewhat mixed (Karhunen and Ledyeva, 2010; Oosterbeek et al., 2010; Solesvik et al., 2014; Tkachev and Kolvereid, 1999).

Previous research postulates that entrepreneurship is both the art and the science (Westhead et al., 2011). The study has confirmed the applicability of Western theories as related to entrepreneurial competencies. Most notably, the empirical evidence of this study drawing upon a sample of 189 students in a city in Ukraine suggests that enterprise education positively influences the shaping of entrepreneurial skills and competencies. Students who study business also reported a higher level of entrepreneurial intentions than those who did not participate in enterprise education. This is in line with some other studies which found that enterprise education has a positive effect on shaping entrepreneurial intentions (Albashrawi and Alashoor, 2017; Bae et al., 2013; Nabi et al., 2017).

Our important and most novel contribution is the link between entrepreneurial skills and competencies reported by young people and entrepreneurial intentions. Previous studies used different theories based on intentions, such as the theory of planned behaviour (Kolvereid, 1996), the entrepreneurial event model (Fitzsimmons and Douglas, 2011), or integrated models (Iakovleva et al., 2011; Iakovleva and Solesvik, 2014; Solesvik et al., 2012) to test the influence of different independent variables (perceived behaviour control, subjective norms, attitudes, desirability, feasibility, personal initiative, self-efficacy and others).

There are several limitations in this study. First, data was only collected at the universities of one city in the south of Ukraine. Further research might focus on students' intentions to become entrepreneurs in other parts of Ukraine and in different emerging economies. Further research on

this and other national contexts that focus on entrepreneurial competencies are still needed. Future research should consider applying qualitative methods to explore the link between competencies and skills and entrepreneurial intentions in more depth. Additionally, this study focused mainly on individual levels of entrepreneurial intentions. Future research might consider the exploration of entrepreneurial intentions at the team level. Team entrepreneurship intentions have not yet been studied.

The results from this paper will provide policy-makers and entrepreneurship educators with additional insights into the key competencies associated with entrepreneurial intentions. Policy-makers who want more young people to start new firms and, probably more importantly, manage their ventures more effectively may develop courses specifically for young people. Such courses should be offered not only to business students but also to the wider student population.

References

- Aidis R., Welter, F., Smallbone, D., Isakova, N. (2007), Female entrepreneurship in transition economies: The case of Lithuania and Ukraine, *Feminist Economics*, 13(2): 157-83. <https://doi.org/10.1080/13545700601184831>.
- Albashrawi, M., Alashoor, T.M. (2017), The role of IT on entrepreneurial intention: The effect of general computer self-efficacy and computer anxiety, available at: <http://aisel.aisnet.org/amcis2017/StrategicIT/Presentations/2/> (accessed 18 February 2018).
- Autio, E., George, G., Alexy, O. (2011), International entrepreneurship and capability development – qualitative evidence and future research directions, *Entrepreneurship Theory and Practice*, 35(1): 11-37. <https://doi.org/10.1111/j.1540-6520.2010.00421.x>
- Bae, T.J., Qian, S., Miao, C., Fiet, J.O. (2014), The relationship between entre-

- preneurship education and entrepreneurial intentions: A meta-analytic review, *Entrepreneurship Theory and Practice*, 38(2): 217-254. <https://doi.org/10.1111/etap.12095>.
- Basu, A., Goswami, A. (1999), South Asian entrepreneurship in Great Britain: Factors influencing growth, *International Journal of Entrepreneurial Behaviour & Research*, 5(5): 251-275.
- Bird, B. (1995), Towards a theory of entrepreneurial competency, in: J.A. Katz, R.H. Brockhaus (Eds.), *Advances on entrepreneurship, firm emergence and growth* (pp. 51-72), Greenwich, Conn.: JAI Press.
- Brinckmann, J., Salomo, S., Gemuenden, H.G. (2011), Financial management competence of founding teams and growth of new technology-based firms, *Entrepreneurship Theory and Practice*, 35(2): 217-243. <https://doi.org/10.1111/j.1540-6520.2009.00362.x>.
- Brownell, J. (2006), Meeting the competency needs of global leaders: A partnership approach, *Human Resource Management*, 45(3), 309-336. <https://doi.org/10.1002/hrm.20115>.
- Bruton, G.D., Ahlstrom, D., Oblój, K. (2008), Entrepreneurship in emerging economies: where are we today and where should the research go in the future, *Entrepreneurship Theory and Practice*, 32(1): 1-14. <https://doi.org/10.1111/j.1540-6520.2007.00213.x>.
- Capaldo, G., Iandoli, L., Ponsiglione, C. (2004), Entrepreneurial competencies and training needs of small firms, paper presented at the 14th Annual IntEnt Conference, Napoli.
- Churchill, N.C., Lewis, V.L. (1983), The five stages of small business growth, *Harvard Business Review*, 61(3): 1-12.
- Colombo, M.G., Grilli, L. (2005), Founders' human capital and the growth of new technology-based firms: A competence-based view, *Research Policy*, 34(6): 795-816. <https://doi.org/10.1016/j.respol.2005.03.010>.
- Davidsson, P., Wiklund, J. (2001), Levels of analysis in entrepreneurship research: Current research practice and suggestions for the future, *Entrepreneurship Theory and Practice*, 25(4): 81-100. <https://doi.org/10.1177/104225870102500406>.
- Davidsson, P., Wiklund, J. (1997), Values, beliefs and regional variations in new firm formation rates, *Journal of Economic Psychology*, 18(2): 179-199. [https://doi.org/10.1016/S0167-4870\(97\)00004-4](https://doi.org/10.1016/S0167-4870(97)00004-4).
- Fitzsimmons, J.R., Douglas, E. (2011), Interaction between feasibility and desirability in the formation of entrepreneurial intentions, *Journal of Business Venturing*, 26(4): 431-440. <https://doi.org/10.1016/j.jbusvent.2010.01.001>.
- Hisrich R.D. (1990), Entrepreneurship/intrapreneurship, *American Psychologist*, 45(2): 209-222.
- Hoffmann, T. (1999), The meanings of competency, *Journal of European Industrial Training*, 23(6): 275-286. <https://doi.org/10.1108/03090599910284650>
- Iakovleva, T., Kolvereid, L., Stephan, U. (2011), Entrepreneurial intentions in developing and developed countries, *Education+ Training*, 53(5): 353-370. <https://doi.org/10.1108/00400911111147686>.
- Iakovleva, T., Solesvik, M., Trifilova, A. (2013), Financial availability and government support for women entrepreneurs in transitional economies: Cases of Russia and Ukraine, *Journal of Small Business and Enterprise Development*, 20(2): 314-340. <https://doi.org/10.1108/14626001311326752>.
- Iakovleva, T., Solesvik, M. (2014), Entrepreneurial intentions in post-Soviet economies, *International Journal of Entrepreneurship and Small Business*, 21(1): 79-100. <https://doi.org/10.1504/IJESB.2014.057916>.
- Iandoli, L., Landström, H., Raffa, M. (2007), Introduction: Entrepreneurship, competitiveness and local development, in: L. Iandoli, H. Landström, M. Raffa (Eds.), *Entrepreneurship, Competitiveness and Local Development: Frontiers in European Entrepreneurship Research* (pp. 1-24), Cheltenham: Edward Elgar Publishing.

- IFC (2009), Investment climate in Ukraine as seen by private business, Kyiv: International Financial Corporation.
- Kalantaridis, C., Labrianidis, L. (2004), Rural entrepreneurs in Russia and the Ukraine: origins, motivations, and institutional change, *Journal of Economic Issues*, 38(3): 659-681.
- Karhunen, P., Ledyeva, S. (2010), Determinants of entrepreneurial interest and risk tolerance among Russian university students: empirical study, *Journal of Enterprising Culture*, 18(3): 229-263. <https://doi.org/10.1142/S0218495810000574>
- Kets de Vries, M.F.R. (1977), The entrepreneurial personality: A person at the cross roads, *Journal of Management Studies* 14(1): 34-57. <https://doi.org/10.1111/j.1467-6486.1977.tb00616.x>.
- Kiss, A.N., Danis, W.D., Cavusgil, S.T. (2011), International entrepreneurship research agenda in emerging economies: A critical review and research agenda, *Journal of Business Venturing*, 27(2): 266-290. <https://doi.org/10.1016/j.jbusvent.2011.09.004>.
- Kolvereid, L. (1996), Prediction of employment status choice intentions, *Entrepreneurship Theory and Practice*, 21(1), 47-58. <https://doi.org/10.1177/104225879602100104>
- Kourilsky, M.L., Walstad, W. B. (1998), Entrepreneurship and female youth: Knowledge, attitudes, gender differences, and educational practices, *Journal of Business Venturing*, 13(1): 77-88. [https://doi.org/10.1016/S0883-9026\(97\)00032-3](https://doi.org/10.1016/S0883-9026(97)00032-3).
- Krueger, N.F., Reilly, M. D., Carsrud, A. L. (2000), Competing models of entrepreneurial intentions, *Journal of Business Venturing*, 15(5): 411-432. [https://doi.org/10.1016/S0883-9026\(98\)00033-0](https://doi.org/10.1016/S0883-9026(98)00033-0).
- Kuckertz, A., Wagner, M. (2010), The influence of sustainability orientation on entrepreneurial intentions – Investigating the role of business experience, *Journal of Business Venturing*, 25(5): 524-539. <https://doi.org/10.1016/j.jbusvent.2009.09.001>
- Ledeneva, A.V. (1998), Russia's economy of favours: Blat, networking and informal exchange, Cambridge, Cambridge University Press.
- Lerner, M., Almor, T. (2002), Relationships among strategic capabilities and the performance of women-owned small ventures, *Journal of Small Business Management* 40(2): 109-125. <https://doi.org/10.1111/1540-627X.00044>.
- Leszczynska, A. (2010), Manager's attitude toward environment, *Industrial Management & Data Systems*, 110(8): 1234-1250. <https://doi.org/10.1108/02635571011077852>.
- Liñán, F., Chen, Y. W. (2009), Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions, *Entrepreneurship Theory and Practice*, 33(3): 593-617. <https://doi.org/10.1111/j.1540-6520.2009.00318.x>
- Man, T., Lau, T. (2000), Entrepreneurial competencies of SME owner/managers in the Hong Kong service sector: A qualitative analysis, *Journal of Enterprising Culture*, 8(3): 235-254. <https://doi.org/10.1142/S0218495800000139>.
- Man, T., Lau, T. (2005), The context of entrepreneurship in Hong Kong: An investigation through the patterns of entrepreneurial competencies in contrasting industrial environments, *Journal of Small Business and Enterprise Development*, 12(4): 464-481. <https://doi.org/10.1108/14626000510628162>.
- Man, T., Lau, T., Chan, K.F. (2002), The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies, *Journal of Business Venturing*, 17(2): 123-142. [https://doi.org/10.1016/S0883-9026\(00\)00058-6](https://doi.org/10.1016/S0883-9026(00)00058-6).
- Manev, I.M., Manolova, T. (2010), Entrepreneurship in transition economies: Review and integration if two decades research, *Journal of Developmental Entrepreneurship*, 15(1): 69-99. <https://doi.org/10.1142/S1084946710001427>.

- Mitchelmore, S., Rowley, J. (2010), Entrepreneurial competencies: A literature review and development agenda, *International Journal of Entrepreneurial Behaviour and Research*, 16(2): 92-111. <https://doi.org/10.1108/13552551011026995>.
- Nabi, G., Lián, F., Fayolle, A., Krueger, N., Walmsley, A. (2017), The impact of entrepreneurship education in higher education: A systematic review and research agenda, *Academy of Management Learning & Education*, 16(2): 277-299. <https://doi.org/10.5465/amle.2015.0026>.
- Oosterbeek, H., Van Praag, M., Ijsselstein, A. (2010), The impact of entrepreneurship education on entrepreneurship skills and motivation, *European Economic Review*, 54(3): 442-454. <https://doi.org/10.1016/j.euroecorev.2009.08.002>
- Orlenko, O., Klochko, Y. (1998), Analysis of barriers for small and medium business in Ukraine, Kyiv: US Agency for International Development.
- Parsyak, V., Zhuravlyova, M. (2001), Small business: Essence, state, and means of stability support, Nikolaev: Ukrainian State Maritime Technical University Press.
- Parsyak, V., Zhuravlyova, M. (2007), Problems of small entrepreneurship, *Economy of Ukraine*, 48(3): 84-89.
- Parsyak, V., Solesvik, M., Parsyak, K.V. (2014), Economic aspects in formation and development of entrepreneurship education, *Aktual'ni Problemy Ekonomiky = Actual Problems in Economics*, 155(1): 126-133.
- Puffer, S.M., McCarthy, D.J., Boisot, M. (2010), Entrepreneurship in Russia and China: The impact of formal institutional voids, *Entrepreneurship Theory and Practice*, 34(3): 441-467. <https://doi.org/10.1111/j.1540-6520.2009.00353.x>.
- Rasmussen, E., Mosey, S., Wright, M. (2011), The evolution of entrepreneurial competencies: A longitudinal study of university spin-off venture emergence, *Journal of Management Studies*, 48(6): 1314-1345. <https://doi.org/10.1111/j.1467-6486.2010.00995.x>.
- Schött, T., Kew, P., Cheraghi, M. (2015), Future potential: A GEM perspective on youth entrepreneurship 2015, GEM Consortium, available at: <http://www.gemconsortium.org/report> (accessed 9 December 2018).
- Shane, S. (1996), Explaining variation in rates of entrepreneurship in the United States 1899-1988, *Journal of Management* 22(5): 747-781. [https://doi.org/10.1016/S0149-2063\(96\)90021-5](https://doi.org/10.1016/S0149-2063(96)90021-5).
- Shenkar, O., von Glinow, M.A. (1994), Paradoxes of organizational theory and research: using the case of China to illustrate national contingency, *Management Science*, 40(1): 56-71.
- Solesvik, M. (2012), Entrepreneurial competencies in emerging economy context, 17th Nordic Conference on Small Business Research, 23-25 May, Helsinki, Finland.
- Solesvik, M. (2013), Entrepreneurial motivations and intentions: investigating the role of education major, *Education + Training*, 55(3): 253-271. <https://doi.org/10.1108/00400911311309314>.
- Solesvik, M. (2017a), A cross-national study of personal initiative as a mediator between self-efficacy and entrepreneurial intentions, *Journal of East-West Business*, 23(3): 215-237. <https://doi.org/10.1080/10669868.2017.1306821>.
- Solesvik, M. (2017b), Hybrid entrepreneurship: How and why entrepreneurs combine employment with self-employment, *Technology Innovation Management Review*, 7(3): 33-41.
- Solesvik, M. (2018), The rise and fall of the resource-based view: Paradigm shift in strategic management, *Izvestia Uralskogo Gosudarstvennogo Ekonomiceskogo Universiteta*, 19(4): 5-18.
- Solesvik, M., Iakovleva, T., Trifilova, A. (2019), Motivation of female entrepreneurs: A cross-national study, *Journal of Small Business and Enterprise Development* (forthcoming).
- Solesvik, M., Westhead, P. (2012), Female and male opportunity effectuation and bricolage in a resource-constrained

- environment (working paper), Durham: Durham University Business School.
- Solesvik, M., Westhead, P., Kolvereid, L., Matlay, H. (2012), Student intentions to become self-employed: The Ukrainian context, *Journal of Small Business and Enterprise Development*, 19(3): 441-460. DOI: 10.1108/14626001211250153.
- Solesvik, M., Westhead, P., Matlay, H. (2014), Cultural factors and entrepreneurial intention: The role of entrepreneurship education, *Education+ Training*, 56(8/9): 680-696. <https://doi.org/10.1108/ET-07-2014-0075>.
- Tang, J., Kacmar, K.M., Busenitz, L. (2012), Entrepreneurial alertness in the pursuit of new opportunities, *Journal of Business Venturing*, 27(1): 77-94. <https://doi.org/10.1016/j.jbusvent.2010.07.001>.
- Tkachev, A., Kolvereid, L. (1999), Self-employment intentions among Russian students, *Entrepreneurship & Regional Development*, 11(3): 269-280. <https://doi.org/10.1080/089856299283209>
- Tonoyan, V., Strohmeier, R., Habib, M., Perlitz, M. (2010), Corruption and entrepreneurship: How formal and informal institutions shape small firm behavior in transition and mature market economics, *Entrepreneurship Theory and Practice*, 34(5): 803-831. <https://doi.org/10.1111/j.1540-6520.2010.00394.x>.
- Ukrainian Government (2002), Postanova vid 12.04.2002 No. 536 Pro Zatverdzhennya Derzhavnoi Programy Pidtrymky Molodizhnogo Pidpryemytva, available at: <http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=536-2002-%EF> (accessed 11 November 2017).
- Westhead, P., H. Matlay (2006), Skills associated with employment positions in SMEs and favourable attitudes toward self-employment: Longitudinal evidence from students who participated in the shell technology enterprise programme, *Technology Analysis & Strategic Management*, 18(1): 93-124. <https://doi.org/10.1080/09537320500520692>.
- Westhead, P., McElwee, G., Wright, M. (2011), *Entrepreneurship: Perspectives and cases*, London: Pearson Education.
- Westhead, P., Solesvik, M. (2016), Entrepreneurship education and entrepreneurial intention: Do female students benefit? *International Small Business Journal*, 34(8): 979-1003. <https://doi.org/10.1177/0266242615612534>.
- World Bank (2018), *Economy Ranking*, available at: <http://www.doingbusiness.org/rankings>
-
- Marina Z. Solesvik** is Professor of Innovation and Management at the Western Norway University of Applied Sciences in Norway. She is a board member at several Norwegian firms and organisations, among them National Riksteatret in Oslo. Marina holds a PhD in Management from the Graduate Business School at the Nord University and a PhD in Entrepreneurship from the Institute of Agrarian Economy in Kiev, Ukraine. Her research interests include regional innovation, open innovation, maritime business, entrepreneurial intentions, female entrepreneurship, digitalisation, and strategic alliances.