Zdolšek Draksler, Tanja; Širec, Karin

**Article**

Conceptual research model for studying students' entrepreneurial competencies

Naše gospodarstvo / Our Economy

**Provided in Cooperation with:**
Faculty of Economics and Business, University of Maribor

Suggested Citation: Zdolšek Draksler, Tanja; Širec, Karin (2018) : Conceptual research model for studying students' entrepreneurial competencies, Naše gospodarstvo / Our Economy, ISSN 2385-8052, De Gruyter Open, Warsaw, Vol. 64, Iss. 4, pp. 23-33, http://dx.doi.org/10.2478/ngoe-2018-0020

This Version is available at:
http://hdl.handle.net/10419/206267

**Terms of use:**
Documents in EconStor may be saved and copied for your personal and scholarly purposes. You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

https://creativecommons.org/licenses/by-nc-nd/3.0
Conceptual Research Model for Studying Students’ Entrepreneurial Competencies

Tanja Zdolšek Draksler
PhD student at the University of Maribor, Faculty of Economics and Business, Slovenia
tanja.zdolsek@gmail.com

Karin Širec
University of Maribor, Faculty of Economics and Business, Slovenia
karin.sirec@um.si

Abstract

The literature review shows a lack of research on the impact of entrepreneurship education on entrepreneurial competencies in relation to entrepreneurial intentions. Further development of the field is needed, but, because of the shortage of suitable research models or because they only partially cover the complex area of entrepreneurial competencies, the purpose of this article is the formulation of a new, updated research model (based on the existing models). Thus, theoretical research of entrepreneurial competencies based on the competence study has been performed. Through in-depth analysis of existing entrepreneurial competencies research models, a congregated hybrid research model is proposed. A new conceptual research model for studying the impact of entrepreneurship education on entrepreneurial competencies in relation to entrepreneurial intentions has been developed. The model will serve for empirical testing of investigated phenomena. The original contribution is in the formulation of a unique research model and the construction of a customized measuring instrument for studying the phenomena of entrepreneurship education impact on entrepreneurial competencies and entrepreneurial intentions.

Keywords: competency theory, entrepreneurial competencies, entrepreneurial intentions, entrepreneurial behaviour, higher education, entrepreneurship education

Introduction

The belief has spread that entrepreneurial motivation can be “embedded” and nurtured in the process of socialization and education. In this context, entrepreneurial competencies1 necessary for entrepreneurship can, thus, be taught (Schøtt et al., 2015, p. 9). Lackeus (2015, p. 14) is convinced that the main goal of entrepreneurship education is, in most cases, exactly the acquisition of entrepreneurial competencies. With this in mind, the OECD/EU (2017, p. 58; 2015, p. 57) data shows that most young people in European countries feel that they do not have

1 For the term “entrepreneurial competencies,” synonyms appear in the literature, e.g., entrepreneurial skills, entrepreneurial abilities.
enough knowledge and competence in order to start their own business. The most frequently quoted reasons why graduates are not engaged in entrepreneurship immediately after graduation is lack of adequate knowledge and self-confidence. Entrepreneurship education is therefore of extreme importance for promotion of entrepreneurship (European Commission, 2008, p. 23). Schøtt et al. (2015, p. 9) summarized Kvedaraite (2014), claiming that entrepreneurship is a method by which young people can improve their life opportunities and lifestyles; eventually, entrepreneurship contributes to reducing youth unemployment in general and overall stability.

Many researchers emphasize the need to raise entrepreneurial intentions among students (Verheul et al., 2001; Heinonen & Poikkijoki, 2006; Rae et al., 2011; Kyndt & Baert, 2015; Schøtt et al., 2015). They also recognized the importance of governmental intervention into educational systems through which cultural norms that stimulate entrepreneurship could be encouraged. Verheul et al. (2001, p. 26, 34) are convinced that the greater the investment of a country in higher education, the higher is the level of newly established companies. Moreover, the already high level of general education can contribute to a higher level of entrepreneurship; thus, specific entrepreneurial education has an even greater impact (Schøtt et al., 2015; Lackéus, 2015).

The European Commission’s awareness of the importance of maintaining a knowledge-based society resulted in the adoption of the recommendation on key competences for lifelong learning in 2018. The main thread is the promotion of entrepreneurial and innovation-oriented thinking and related competencies. The idea is to help people acquire the basic competencies needed for work and life in the 21st century. One of the recommended eight key competencies is entrepreneurship competence (European Commission, 2018).

To the best of our knowledge, there are not many empirical researches of entrepreneurial competencies. Authors (Kyndt & Baert, 2015, p. 22; Sánchez, 2013, p. 448) draw attention to the need of empirical research, which studies the impact of entrepreneurship education on entrepreneurial competencies in connection with entrepreneurial intentions. Mitchelmore and Rowley (2010) are convinced that further development of the field is needed, both the theory of entrepreneurial competencies and research work with practical studies and development of measuring instruments. This is precisely the goal of this article, i.e., to contribute to the treasury of such research.

The current paper represents the continuation of the previous published article (Zdolšek & Širec, 2014), which addresses the topic of entrepreneurship education’s impact on entrepreneurial intentions of students and is structured as a review of empirical research. The objective of the previous article was the development of conceptual research model for studying the impact of entrepreneurship education on entrepreneurial intentions and entrepreneurial competencies. The current paper focuses on the entrepreneurial competencies and is structured as follows. After the introduction, we present the theoretical approaches to the competence study. Next, a theoretical overview of entrepreneurial competencies is presented. Based on our findings, we structured an updated conceptual research model for studying the impact of entrepreneurial education on the entrepreneurial competencies and entrepreneurial intentions. Additionally, we briefly present the measuring instrument of the proposed model.

Theoretical Approaches to the Competence Study

The competency theory is based on the study of successful leaders. It reveals their behaviours, attitudes, and skills and presents them in the form of measurable characteristics. It explores ways to combine these units to create individuals who prove superior performance (Mitchelmore & Rowley, 2010, p. 97). Some authors use several terms as synonyms, i.e., competencies, skills, expertise, abilities, etc. In general, competencies are divided into the competencies of individuals and into competencies of organizations. We are interested in the competencies of individuals.

The theory of studying entrepreneurial behaviour is often divided into focusing on personality traits (McClelland, 1987) or on the competence of individuals through the competency approach (Boyatzis, 1982). While studying personality traits addresses profiling successful individuals, the competency approach identifies the competencies of individuals, which is the point of our interest. The competency approach is often used in management performance research and has been in use since Boyatzis (1982) published a study of American managers and their competencies (1982) (Man et al., 2002, p. 126). McClelland (1973) says that competencies are crucial to the success or failure of an individual—not formal education, which is most often mentioned. Boyatzis (1982) links competencies with emotional, social, and cognitive intelligence and claims these are the basic characteristics of a person, which result in effective performance or career efficiency. Boyatzis adds that competencies are reflected in an individual’s behaviour.

The literature review shows that, for competencies, there is no universal definition. Man et al. (2002) used the competency approach by examining the capabilities of key actors in organizations. Brophy and Kiely (2002, p. 165) point out that possessing competencies does not necessarily mean that an
individual is also capable. The authors continue that competencies can be displayed or proven only through the behaviour and actions of the individual (Man et al., 2002, p. 133).

In the literature, we note that some authors associate competencies with personal characteristics of the individual (Bratton & Gold, 2003), some with knowledge (Bohlander & Snell, 2004; McClelland, 1998), and others equate competencies with behaviours (Aragon & Johnson, 2002). Bacigalupo et al. (2016, p. 20) and Man et al. (2002) defined competencies as a set of knowledge, skills, and relations. Bird (1995) defined competencies as behavioural and observable characteristics. On the other hand, the authors are united in that an individual is not born with competencies but acquires and develops them over time. Competencies are therefore variable and learnable, which allows intervention in terms of choice and teaching (Man et al., 2002, p. 133; Mitchelmore & Rowley, 2010, p. 96).

An Overview of Entrepreneurial Competencies

The basis of entrepreneurial competencies is presented from the theory of managerial competencies (Mitchelmore & Rowley, 2010, p. 99). Boyatzis (1982) pointed out the connection between entrepreneurial competencies and managerial competencies. Various authors began to research managerial competencies in the 1960s and 1970s, continuing in the 1980s (McClelland, 1961, 1973; Boyatzis, 1982), while research on entrepreneurial competencies appeared later, in the 1980s and 1990s. Since then, we have witnessed research that compares managerial and entrepreneurial competencies (Chandler & Hanks, 1994). Most authors, who are doing research on entrepreneurial competencies, build their work on the competency approach.

Chandler and Jansen (1992) asked which skills are essential for successful entrepreneurial action. They suggested that the core of entrepreneurial competencies represents the ability to identify entrepreneurial opportunities. Otherwise, the authors combined individual competencies with respect to three basic roles, which they believed are important for a successful entrepreneur to take on: entrepreneurial, managerial, and professional–technical roles.

Bird (1995) claimed that competencies are related to entrepreneurial behaviour and are learnable. Bird also claimed that the characteristics of an individual are fixed and defined as inaccessible, as we cannot learn them. Factors that can influence the development of entrepreneurial competencies and should therefore be taken into account are education, work experience, and entrepreneurial experience (Bird, 1995, p. 21).

Comparison of the necessary competencies of managers and entrepreneurs is not uniform. Busenitz and Barney (1997, p. 15, 23) compared managers and entrepreneurs in decision-making processes (more precisely, overconfidence). The authors further claimed that these two groups think differently.

Kiggundu (2002) purported that the necessary entrepreneurial competencies possessed the following attributes: relationships, values, beliefs, knowledge, skills, abilities, personality, wisdom, professionalism (social, technical, managerial), mentality, and behaviour. The listed qualities are also necessary for successful and sustainable entrepreneurship.

Some consider that entrepreneurial competencies are necessary for starting a business, while the development of a company requires managerial competencies. Others point out that entrepreneurship requires competencies in both areas. Entrepreneurial competencies are defined as the overall ability of an entrepreneur to perform work (Man et al., 2002). On the other hand, the authors agreed that the entrepreneurial context is focused on the individual, while the managerial context focuses on the organization (Mitchelmore & Rowley, 2010, p. 97).

Entrepreneurial competencies based on Sánchez (2013, p. 450) represent specific personal characteristics: self-efficacy, proactivity, and risk-taking capability. Lans et al. (2014) drew attention to five generic competencies, which are often referred to as the basis of entrepreneurial competence: (1) opportunity competence, (2) social competence, (3) business competence, (4) industry-specific competence, (5) entrepreneurial self-efficacy. Lackéus (2015) defined entrepreneurial competencies as having the knowledge, skills, and attitudes that influence the willingness and ability of entrepreneurial engagement.

Kyndt and Baert (2015, p. 22) stated: “Entrepreneurship competencies predict future entrepreneurial activity.” Preliminary research has shown that entrepreneurs and their competencies are central to the success of SMEs. It is important to identify entrepreneurial competencies because, only in such a way, can organizations, businesses, and higher education institutions influence their development (Kyndt & Baert, 2015, p. 13).

The older generation grew up in a time when experiences, especially the working experience in a company, was considered as a way of acquiring entrepreneurial competencies and subsequently served for entering the world of entrepreneurship. It was not typical that entrepreneurial competencies could be learned without practical work in a company. Today’s young generation is growing up in the age of education philosophy, and, because entrepreneurial
competencies are learnable, education and training for entrepreneurship are proposed as a good way to acquire competencies. This is supposed to be the basis for entry into entrepreneurship. New and emerging entrepreneurs are therefore often younger than those of previous generations (Schøtt et al., 2015, p. 10).

**Theoretical Models Used**

We have selected several models of entrepreneurial competencies, based on which we will build the conceptual research model. The first model is from Man (2001) and Man et al. (2002), the second from Kynrd and Baert (2015), and the third model is from Moberg et al. (2014).

### Table 1. Eight Competence Areas According to Man (2001) and Man et al. (2002)

<table>
<thead>
<tr>
<th>Competence Area</th>
<th>Behavioural Focus</th>
<th>Literature Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal strength competencies</td>
<td>Competencies regarding the ability to maintain a high level of energy, self-motivating to maintain an optimal level of activeness, responding to constructive criticism, maintaining a positive attitude, scheduling tasks according to time management, identifying own strengths and weaknesses, and matching them with opportunities and threats.</td>
<td>Man (2001).</td>
</tr>
</tbody>
</table>

Man et al. (2002, p. 124–126) defined entrepreneurial competencies as a collective ability of an entrepreneur to successfully perform his/her work. The authors claim these are higher-level features that include personality traits, skills, and knowledge. The model of entrepreneurial competencies by Man (2001) and Man et al. (2002) is composed from eight competence constructs (Table 1): (1) opportunity competencies, (2) relationship competencies, (3) conceptual competencies, (4) organizing competencies, (5) strategic competencies and (6) commitment competencies, (7) learning competencies and (8) personal strength competencies. The authors pointed out the need for an entrepreneur to find a balance between different competencies.

Kynrd and Baert (2015) cited 12 competence constructs (Table 2): (1) perseverance, (2) planning for the future, (3) ...
insight into the market, (4) orientation toward learning, (5) seeing opportunities, (6) awareness of potential returns on investment, (7) decisiveness, (8) independence, (9) self-knowledge, (10) building networks, (11) ability to persuade, (12) social and environmentally conscious conduct.

Moberg et al. (2014) defined entrepreneurial competencies as entrepreneurial skills (creativity, planning, financial literacy, resource management, risk management and team work), entrepreneurial mindset (self-efficacy, control, self-esteem), entrepreneurial knowledge, connectedness to education and to career ambitions. We will take over only a part of the model from Moberg et al., namely, the one that relates to entrepreneurial knowledge and creativity.

**Proposed Conceptual Research Model**

Presented theoretical models have been adopted completely (first model from Man (2001) and Man et al. (2002); the second model from Kyndt and Baert (2015)) and partially (third model from Moberg et al. (2014)). Here, it is necessary to add that the existing models had to be modified for the purpose of creating a model that studies the impact of entrepreneurship education on entrepreneurial competencies and entrepreneurial intentions of higher education students. Because some of the competence constructs completely or partially overlap with each other, we merged them and obtained the final 17 competence constructs (Table 3). The updated conceptual research model, which is the continuation that follows from the past article (Zdolšek

<table>
<thead>
<tr>
<th>Competence area</th>
<th>Behavioural Focus</th>
<th>Literature Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perseverance</strong></td>
<td>Competencies related to the ability of risks handling and confronting with possible consequences, persistence to achieve goals.</td>
<td>Kyndt and Baert (2015), McClelland (1987), Markman and Baron (2003), Valtosen (2007), Rauch and Frese (2007)</td>
</tr>
<tr>
<td><strong>Planning for the future</strong></td>
<td>Competencies in relation to risk-reduction efforts when planning for the future. It includes a vision of medium and long-term goals. It is also about transforming the vision into real (work) planning.</td>
<td>Kyndt and Baert (2015), Brinckmann and drugi (2010), Chwolka and Raith (2012), Karlsson and Honig (2009)</td>
</tr>
<tr>
<td><strong>Insight into the market</strong></td>
<td>Knowing the market, giving the entrepreneur the basis for assessing potential risks, as well as identifying competition and analyzing the own position on the market.</td>
<td>Chwolka and Raith (2012), De Clercq et al. (2012), Man et al. (2002), Wagener et al. (2010)</td>
</tr>
<tr>
<td><strong>Orientation towards learning</strong></td>
<td>Ability and desire for new challenges and getting to know novelties, such as technical and economic changes and innovations. It is about finding new knowledge and skills, in the desire for its own development.</td>
<td>Lans et al. (2005), (2008)</td>
</tr>
<tr>
<td><strong>Awareness of potential returns on investment</strong></td>
<td>Awareness of potential returns, i.e., the ability to measure the strengths and weaknesses of financial decisions.</td>
<td>Man et al. (2002)</td>
</tr>
<tr>
<td><strong>Decisiveness</strong></td>
<td>Competencies in making clear decisions. It is often about making decisions that not everyone agrees with, and the result of this decisions is not completely predictable.</td>
<td>Man et al. (2002), Rezaei-Zadeh et al. (2014), Wagener et al. (2010)</td>
</tr>
<tr>
<td><strong>Independence</strong></td>
<td>Acting independently of others. The ability to decide about what to do.</td>
<td>Rauch and Frese (2007), Wagener et al. (2010)</td>
</tr>
<tr>
<td><strong>Self-knowledge</strong></td>
<td>Competencies of self-understanding or self-awareness and also about self-confidence.</td>
<td>Hayward et al. (2010)</td>
</tr>
<tr>
<td><strong>Building networks</strong></td>
<td>It is important for entrepreneurs to establish an appropriate (internal and external) network of contacts and to maintain this network.</td>
<td>Davidsson and Honig (2003), McClelland (1987), Baron and Markman (2003), Man et al. (2002), Markman and Baron (2003)</td>
</tr>
<tr>
<td><strong>Ability to persuade</strong></td>
<td>It allows entrepreneurs to convince others about their thinking, plans, or products.</td>
<td>Baron and Markman (2003), Brush (2008), Davidsson and Honig (2003), Markman and Baron (2003), McClelland (1987), Wagener et al. (2010)</td>
</tr>
<tr>
<td><strong>Social and environmentally conscious conduct</strong></td>
<td>Functioning in a socially responsible manner that regulates economic, social and environmental interests and the future consequences that humanity has on the world.</td>
<td>Lans et al. (2008)</td>
</tr>
</tbody>
</table>

Adapted from Kyndt and Baert (2015)
Table 3. Proposed Model of Competence Constructs

<table>
<thead>
<tr>
<th>Competence Construct</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competencies for strategic planning for the future</td>
<td>Man (2001), Man et al. (2002), Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Competencies of decisiveness and commitment</td>
<td>Man (2001), Man et al. (2002), Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Conceptual competencies</td>
<td>Man (2001), Man et al. (2002)</td>
</tr>
<tr>
<td>Organizing competencies</td>
<td>Man (2001), Man et al. (2002)</td>
</tr>
<tr>
<td>Personal strength competencies</td>
<td>Man (2001), Man et al. (2002)</td>
</tr>
<tr>
<td>Learning competencies</td>
<td>Man (2001), Man et al. (2002), Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Competencies of self-knowledge</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Sustainable behaviour competencies</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Competencies for market insight</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Competencies of recognizing opportunities</td>
<td>Man (2001), Man et al. (2002), Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Competencies of building networks and relationships</td>
<td>Man (2001), Man et al. (2002), Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Ability to persuade</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Independence</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Awareness of potential returns on investments</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Perseverance</td>
<td>Kyndt and Baert (2015)</td>
</tr>
<tr>
<td>Entrepreneurial knowledge</td>
<td>Moberg et al. (2014)</td>
</tr>
<tr>
<td>Creativity</td>
<td>Moberg et al. (2014)</td>
</tr>
</tbody>
</table>

Figure 1. Updated Conceptual Research Model for Studying the Impact of Entrepreneurship Education on Entrepreneurial Competencies and Entrepreneurial Intentions

Adapted from Zdolšek and Širec (2014)
Measurement of entrepreneurial competencies is done through behaviour measurement, which is specific to a certain competence. The basis of the measurement instrument’s present claims is designed as behavioural indicators and asks individuals how often they carry out certain behaviours (Kynadt & Baert, 2015, p. 15; Chandler & Jansen, 1992). Behavioural indicators are used because competencies can be shown only with the individual’s behaviour and actions (Man et al., 2002, p. 133). It is also necessary to point out the possibility of overestimation from individuals. Table 4 represents a short overview of the prepared measuring instrument for the proposed model.$^2$

Table 4. Overview of the Measuring Instrument by Components

<table>
<thead>
<tr>
<th>Measuring Instruments</th>
<th>Number of Items (questions or claims)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring instrument for TPB$^3$ constructs</td>
<td>24</td>
</tr>
<tr>
<td>Measuring instrument for entrepreneurial competencies</td>
<td>99</td>
</tr>
<tr>
<td>Demographic data</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>132</td>
</tr>
</tbody>
</table>

**Conclusion**

The global trend is that more people are involved in higher education than ever before (Schøtt et al., 2015, p. 7). Issues arise because the labour market and the education system are not harmonized; therefore, many young graduates (at least in the short-term) remain unemployed. On the other hand, entrepreneurship is known for its impact on economic growth while accelerating the technological development and employment rate (Schøtt & Others, 2015, p. 17; Lackéus, 2015, p. 6). Therefore, entrepreneurship education represents a key solution for stabilization of negative labour market conditions. Looking deeper into the meaning of entrepreneurship education for students, it means the development of certain skills or qualities and is not necessarily directly linked to the creation of new businesses (Lackéus, 2015, p. 6). The most important aspect from our perspective is that, through entrepreneurship education, students develop entrepreneurial competencies and change their attitude toward entrepreneurship (Schøtt et al., 2015, p. 9). A literature review has shown the importance of entrepreneurial competencies of students, as they can be the basis for their entrepreneurial intentions.

To summarize, we performed a theoretical research of entrepreneurial competencies based on the competence study. Through an in-depth analysis of existing entrepreneurial competencies research models of Man (2001) and Man et al. (2002), Kynadt and Baert (2015), and Moberg et al. (2014), we conducted a new, congregated hybrid research model with 17 competence constructs. This was done through modification of the existing models. The new conceptual research model for studying the impact of entrepreneurship education on entrepreneurial competencies in relation to entrepreneurial intentions of students will serve for empirical testing of investigated phenomena. The present conceptual research model is a continuation from Zdolšek and Širec’s (2014) research and has updated and precisely designed the measurement instrument for analysis of entrepreneurial competencies through defined competence constructs. Consequently, the updated conceptual research model is ready for further use to study the impact of entrepreneurship education on entrepreneurial competencies in relation to entrepreneurial intentions. The original contribution is in the formulation of a unique research model and the construction of a customized measuring instrument.

Despite the importance of linking entrepreneurship education—entrepreneurial competencies—entrepreneurial intentions, the scientific literature dealing with all three variables is scarce (Zdolšek & Širec, 2014). The only author dealing with all three variables, to the best of our knowledge, is Sánchez (2011, 2013); thus, we further emphasize the need for scientific research in this area, which is also the most important message of the current paper. Finally, we agree with Mitchelmore and Rowley (2010) that further development in this field is needed, both in the sense of theory of entrepreneurial competencies as well as in research work with practical studies. The next step will therefore consist of empirical testing of the proposed conceptual research model, which studies the impact of entrepreneurship education on entrepreneurial competencies and entrepreneurial intentions of students in higher education.

---

$^2$ The entire measuring instrument is available upon request by the authors.

$^3$ Stands for theory of planned behaviour (Ajzen, 1991) and was used to study the entrepreneurial intentions. More in detail presented in the article Zdolšek and Širec (2014).
References


Konceptualni raziskovalni model za raziskovanje podjetniških kompetenc študentov

Izvleček

raziskovalnega modela in izdelava prilagojenega merilnega instrumenta za proučevanje vpliva podjetniškega izobraževanja na podjetniške kompetence in podjetniške namere.

**Ključne besede:** kompetenčna teorija, podjetniške kompetence, podjetniške namere, podjetniško vedenje, visokošolsko izobraževanje, podjetniško izobraževanje