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Examining determinants of entrepreneurial intentions in Slovenia: applying the theory of planned behaviour and an innovative cognitive style

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ABSTRACT

The aim of this paper is to present research on determinants of entrepreneurial intentions through the framework of the theory of planned behaviour and an individual innovative cognitive style. By employing the theory of planned behaviour, the authors evaluate how personal attitudes, subjective norms and perceived behavioural control can affect one's intentions to become an entrepreneur. Additionally, the innovative cognitive style is tested as a potentially significant determinant of entrepreneurial intentions. A questionnaire survey was done using the sample of 330 bachelor and master students in economics and business from Slovenia. Research propositions were tested using linear hierarchical regression modelling. The results suggest that personal attitudes towards entrepreneurship, subjective norms and perceived behavioural control are positively related to one's entrepreneurial intentions. The innovative cognitive style has also been found to be significant in creating one's intention to become an entrepreneur. The paper extends the current knowledge on entrepreneurial intentions by analysing the exclusive and mutual influence of different factors recognised by the theory of planned behaviour and the innovative cognitive style on entrepreneurial intentions, as well as providing useful insights into antecedents of entrepreneurial intentions in the Slovenian context.

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1. Introduction

Entrepreneurship is seen as a prominent leverage of economic growth and success. It is believed that entrepreneurship benefits society: (1) by recognising business opportunities and generating ideas and resources that are used in developing the design of novel products and services or (2) by raising efficiency of existing products and services (Armstrong & Hird, 2009; Baron, 2004). In that sense, Mitchell et al. (2007) highlight that the entrepreneur addresses the essential task of the value-creation-driven opportunity identification.

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Entrepreneurship is determined by different economic and non-economic conditions. In a broader sense, it is possible to distinguish three sets of factors. Those are: (1) personal characteristics of an individual including its socio-demographics and personality traits; (2) economic environment, including macroeconomic variables, industrial and financial market conditions; and (3) functioning of institutions and sociological variables, including formal institutions, the role of cultural values and social networks (Cuervo, 2005; Muhanna, 2007).

Many research streams have tried to identify the most important drivers of an entrepreneurial process, analysing not only different contextual variables and sociological conditions fostering entrepreneurship, but also analysing individual entrepreneurs. 'Entrepreneurial personality'-based research (Mitchell et al., 2002) aims to define a set of personal characteristics or traits specific for entrepreneurs. For example, self-confidence, risk-taking tendency, drive for success, internal locus of control, innovativeness and independence are just some of the traits that were often examined (e.g. Elenurm & Alas, 2009; Espiritu-Olmos & Sastre-Castillo, 2015). However, efforts to define some personal traits that are typical for all entrepreneurs have yielded weak or non-significant results with a small explanatory power (Izquierdo & Buelens, 2008). One of the problems with this line of research is that it focused on ex-post situations, i.e., on entrepreneurs who had already started a firm (Autio, Keeley, Klofsten, Parker, & Hay, 2001) and by doing so diminished the importance of different contingencies in one's behaviour.

Boyd and Vozikis (1994, p. 64) emphasise a need for 'a more process-oriented approach that directs attention toward the complex relationships among entrepreneurial ideas and the resulting outcomes of these ideas'. Such studies that assess how behaviour is 'initiated, directed, sustained, and stopped' (Kumara, 2012, p. 108) have gained currency within current entrepreneurship research (Sivarajah & Achchuthan, 2013). Since intentions can be considered as antecedents of one's behaviour, using the theory of planned behaviour (Ajzen, 1991) as the theoretical basis, numerous researchers have emphasised the importance of entrepreneurial intentions in predicting one's behaviour in various countries and settings (e.g. Autio et al., 2001; Kumara, 2012; Misoska, Dimitrova, & Mrsik, 2016; Tkachev and Kolvereid, 1999).

Cognitive aspects of entrepreneurs have also been examined as antecedents of entrepreneurial behaviour (e.g. Barbosa, Gerhardt, & Kickul, 2007; Kuckertz & Wagner, 2010). However, the field of understanding entrepreneurial cognition has only recently received growing attention and there is still little knowledge about the relationship between cognition and entrepreneurial intentions (Grégoire, Corbett, & McMullen, 2011; Sanchez, Carballo, & Gutierrez, 2011).

The aim of our research is to explore determinants of entrepreneurial intentions in the framework of the theory of planned behaviour and the individual innovative cognitive style. More specifically, we explore separately and interactively the effect of personal attitudes toward entrepreneurship, subjective norms and perceived behavioural control, as three intention antecedents recognised by the theory of planned behaviour and the innovative cognitive style, on one's entrepreneurial intentions.

Data for our analysis was gathered through empirical research on a sample of Slovenian students. A questionnaire survey was designed to analyse a possible impact of analysed variables on one's entrepreneurial intention, and give an answer to current challenges in fostering entrepreneurship and the development of entrepreneurial intent in Slovenia. Slovenia can be seen as an interesting setting for the study of entrepreneurial intentions and factors that

foster entrepreneurship. Due to its historical and social legacy, Slovenia still lags behind high-income countries in terms of entrepreneurial activities and systems, but also has a high potential for the development of such activities (Antoncic, Bratkovic Kregar, Singh, & DeNoble, 2015). Research and comparison with other countries show that Slovenia is still not focused enough on active education of potential managers and entrepreneurial activities need to be expanded and developed (Dimovski & Znidarsic, 2004). In addition, the results derived from the sample of Slovenian students show that students' entrepreneurial intentions are relatively low (Dermol & Rozman, 2014). For these reasons, we believe that it is interesting and useful to analyse determinants of entrepreneurial intentions in the context of Slovenia and to make insights and recommendations for further development.

Taking into consideration that entrepreneurship needs to be seen through many dimensions and perspectives (Armstrong & Hird, 2009) and the existence of specific patterns of relationship (Liñán & Chen, 2009), the obtained data will be tested using linear hierarchical regression, while creating composite scores of items loading on the various variables. Three models have been analysed and differences among them have been observed. The first model analyses solely the influence of three intention antecedents defined by the theory of planned behaviour, the second model analyses only the influence of the innovative cognitive style and the third one incorporates previous models, analysing the dimensions of the innovative cognitive style as determinants of entrepreneurial intentions together with three intention antecedents tested in the first model.

Contributions of our study are several. First, our study seeks to investigate the separate and interactive impact of the innovative cognitive style and elements of the theory of planned behaviour on entrepreneurial intentions. As stated previously, there are many studies on entrepreneurial intentions using the theory of planned behaviour, in various cultures and setting. Still, only a few researchers combined the innovativeness and the impact of three antecedents of intentions defined by the theory of planned behaviour in their models as the determinants of entrepreneurial intentions. Authors mainly combine the antecedents of Ajzen's theory of planned behaviour with other factors, e.g., Shneor, Metin Camgöz, and Bayhan Karapinar (2013) investigated if these antecedents influence the entrepreneurial intentions in combination with the culture and sex. Kuckertz and Wagner (2010) have combined the theory of planned behaviour with the innovativeness style, but using the composite measure of the Kirton Adaptation-Innovation Inventory. In our research, we combine the theory of planned behaviour and the innovative cognitive style, but we measure the innovative style using the global innovativeness scale, a measure that was developed by Hurt, Joseph, and Cook (1977) and upgraded by Goldsmith (2011). This global innovativeness scale has been mainly tested on an American sample (Goldsmith, 2011). Therefore, the second contribution of this research is in testing the validity of the global innovativeness scale on a Slovenian sample. In addition, by analysing specific determinants of entrepreneurial intention in the Slovenian context, we aim to provide some useful insights into antecedents of entrepreneurial intentions in the Slovenian context and give recommendations that can be implemented to instigate and contribute to entrepreneurial activities in Slovenia.

The paper is organised into five sections. After the introduction, a research model is set and research propositions are developed. This is followed by the presentation of methodology used in the research, data analyses and discussion of the main research findings. Finally, research results are analysed from the theoretical and practical standpoint, together with their implications, limitations of the study and future research possibilities.

2. Theory and research propositions development

2.1. Research model

Individuals with the intention of founding a new organisation 'have certain personal attitudes, interests, values, and talents regarding entrepreneurship' (Lee & Wong, 2004, p. 10) and they are influenced by different situational pressures and norms that form individual entrepreneurial intentions. However, the direct investigation of various variables influencing the formation of intention is still insufficient. Additional analyses are needed in order to understand the antecedents of intentions and their mutual connectedness. By properly understanding the causes of individual entrepreneurial intentions formation, we can 'increase our ability to understand and predict entrepreneurial activity' (Krueger, Reilly, & Carsrud, 2000, p. 412).

To better understand various paths and factors consequently influencing entrepreneurial behaviour and to comprehend possible relations between different beliefs on entrepreneurship, the innovative cognitive style and entrepreneurial intentions, we have developed several research propositions (R.P.). We propose that entrepreneurial intentions are under the positive influence of personal attitudes towards entrepreneurship, subjective norms and perceived behavioural control ($R.P._1$) and that the innovative cognitive style also has a positive influence on entrepreneurial intentions ($R.P._2$).

These presumptions are further analysed more thoroughly, taking into consideration existing theoretical frameworks and empirical research.

2.2. Attitudes towards entrepreneurship and entrepreneurial intentions

The literature review reveals that intentions can be seen as the single best predictor of planned behaviour. This includes entrepreneurial activities that clearly represent planned and, thus, intentional behaviour (Krueger & Carsrud, 1993). Shepherd and Krueger (2002, p. 170) highlight that 'intentions-based models have been successful in investigating the cognition of individuals and their resultant behaviour' and, as such, they offer a good framework to explain entrepreneurial intentions (Krueger et al., 2000).

Bird (1988, p. 442) defines entrepreneurial intentions as 'a state of mind that directs an individual's attention' towards design of a new business venture, i.e. organisational emergence. Boyd and Vozikis (1994, p. 65) see the function of intentionality in 'directing critical strategic thinking and decisions and operating as a perceptual screen for viewing relationships, resources, and exchanges'. Empirical analyses of entrepreneurial intentions are widely present (e.g., Autio et al., 2001; Kolvereid, 1996; Kumara, 2012; Tkachev & Kolvereid, 1999) and meta analytic reviews of previous research (e.g. Armitage & Conner, 2001; Sutton, 1998) showed that intentions accounted for from ~ 19% to up to 39% of the variance in one's behaviour.

As the theory of planned behaviour proposes, intentions can be significantly predicted by a specific set of beliefs (Ajzen, 1991). People form an intention toward a certain behaviour, believing that this behaviour will produce desired outcomes (Boyd & Vozikis, 1994). The relationship between beliefs and behaviour is entirely explained by the beliefs–intention and the intention–behaviour relations (Krueger et al., 2000), even when, as Krueger and Carsrud (1993) emphasise, beliefs may appear to explain behaviour.

Considering the main aspects of Ajzen's theory of planned behaviour, it is possible to recognise that entrepreneurial intentions are developed on the basis of three antecedents: (1) beliefs about the outcomes of being an entrepreneur—*behavioural beliefs* that produce a personal attitude toward the behaviour (P.A.); (2) beliefs about the normative expectations and perceived pressures of others regarding the choice of being an entrepreneur—*normative beliefs* that result in a subjective norm (S.N.); and (3) beliefs about the existence of factors that may enhance or hinder performance of the possible future entrepreneurial role—*control beliefs* that form perceived behavioural control (P.B.C.) (Ajzen, 2002; Liñán & Chen, 2009). In other words, the theory posits that intentions toward becoming an entrepreneur will depend on the perception that becoming an entrepreneur is within a person's competence and control and that becoming an entrepreneur is personally and socially desirable (Shepherd & Krueger, 2002).

Personal attitudes (P.A.) toward entrepreneurship refer to the 'degree to which a person has a favourable or unfavourable appraisal' of entrepreneurial behaviour (Tkachev and & Kolvereid, 1999, p. 272). A positive belief about entrepreneurship affects a person's entrepreneurial intention. Prior research (e.g., Franke & Luthje, 2004; Krueger et al., 2000) confirms a strong, positive relationship between one's attitude and entrepreneurial intentions.

Subjective norms (S.N.) represent personal beliefs about the support of others in the environment. Research done by Astuti and Martdianty (2012), Kolvereid (1996), Kolvereid and Isaksen (2006) and Tkachev and Kolvereid (1999) showed that one's social valuation of entrepreneurship and environment is positively related to entrepreneurial intentions.

Perceived behavioural control (P.B.S.) refers to 'cognitive evaluations of personal capabilities in reference to the specific tasks of entrepreneurship' (Chen, Greene, & Crick, 1998, p. 312). It has an important role in recognition of skills needed through the process of new venture creation (Kickul, Gundry, Barbosa, & Whitcanack, 2009), affecting someone's choice of action as well as the effort someone is ready to invest (Shepherd & Krueger, 2002). Persons having a high perceived behavioural control will have higher beliefs that they will be able to create a new business venture successfully (Martínez Campo, 2011). Among the three intention determinants, most of the studies highlight the importance of perceived behavioural control as the strongest factor that influenced entrepreneurial intentions (e.g., Boyd & Vozikis, 1994; Chen et al., 1998; Sivarajah & Achchuthan, 2013) and see it as decisive for action (Autio et al., 2001).

Therefore, according to the previous research and based on the Slovenian context, we aim to test and reinforce the results of other authors claiming that there is a positive influence of personal attitudes, subjective norms and perceived behavioural control, as defined by the theory of planned behaviour, on entrepreneurial intentions. In that sense, we propose the first research proposition ($R.P._1$):

$R.P._1$: Personal attitudes towards entrepreneurship, subjective norms and perceived behavioural control positively influence entrepreneurial intention.

2.3. Innovative cognitive style and entrepreneurial intentions

Research about individual cognition has been extensively present in organisational behaviour literature and it has been seen as a potentially relevant field in explaining entrepreneurial behaviour by several authors (e.g., Allinson, Chell, & Hayes, 2000; Krueger, 2007; Lope

Pihie, Bagheri, & Sani, 2013; Mitchell et al., 2002). In our work we start from the definition of Armstrong and Hird (2009, p. 113) that 'cognition is a forward-looking form of intelligence that is premised on an actor's belief about the linkage between the choice of actions and the subsequent impact of those actions on outcomes'. In line with the above, Mitchell et al. (2002) define entrepreneurial cognition as the activities of 'assessments, judgments or decisions involving opportunity evaluation, venture creation, and growth'. The aspects of cognition include personal 'beliefs and values, the cognitive style and mental processes' (Sanchez et al., 2011, p. 433). It is believed that entrepreneurs think and act in a different way than others. A cognitive perspective in entrepreneurship analyses various beliefs, values, the cognitive style and various mental processes and models related to information and knowledge assessment, such as decision-making, problem-solving and others, that entrepreneurs use in detection and exploitation of opportunities in their environment (Vaghely & Julien, 2010). As regards someone's choice to become an entrepreneur, Lope Pihie et al. (2013, p. 176) emphasise that 'entrepreneurship cognition presents the process of thinking and constructing entrepreneurial knowledge that enables individuals to assess their abilities to perform entrepreneurial tasks and roles and choose whether or not to pursue an entrepreneurial career'. In that sense, some researchers use the term 'cognitive style' to define particular ways that entrepreneurs perceive, organise and use environmental information in a different way than non-entrepreneurs do (Sanchez et al., 2011).

Several researchers have analysed different dimensions of cognition and cognitive style and their relation to entrepreneurial behaviour. For instance, Allinson et al. (2000) and Armstrong and Hird (2009) have tried to explore the relationship between an intuitive and analytic cognitive style and entrepreneurial behaviour. Kickul et al. (2009) showed that cognitive orientation for analysis or intuition of individuals influences their attitudes towards their entrepreneurial self-efficacy, thus influencing their plans for becoming an entrepreneur in the future. Bouckenooghe, Cools, Vanderheyden, and Van den Broeck (2005) consider four basic cognitive styles: knowing (analytical and conceptual), planning (analytical and experiential), creative (holistic and conceptual) and cooperating (holistic and experiential). Their results show that entrepreneurs scored higher in the knowing style and the creative style than non-entrepreneurs did. According to Kirton (1976), the individual cognitive style postulates two distinct types of style (adaptor vs innovator). Adaptors are described as 'doing things better', while innovators 'do things differently'. Adaptors and innovators are distinct, since adaptors are portrayed as disciplined, conservative, efficient and methodical, while innovators can be portrayed as 'impulsive and quick to change the status quo in their search for a different solution' (Marcic, Willey, & Johnson, 1990, p. 98). The innovative cognitive style positively affects creativity and introduction of new opportunities. Innovation is specifically seen as a characteristic of entrepreneurs as they have to see and seize opportunities where others do not recognise them and provide creative and innovative solutions (Armstrong & Hird, 2009). There are two approaches toward the definition of the innovativeness. The first group of definitions stems from the speed of innovation adoption. Rogers (1983, p. 245) defines innovativeness as 'the extent to which an individual or institutional adopter adopts new ideas relatively earlier than do other members of population or social system'. On the other hand, there are researchers who define innovativeness as being the result of innovative cognitive style (e.g. Kirton, 1976).

Numerous researchers have tried to measure the innovative cognitive style, such as Hurt et al. (1977), Jackson (1976) and Kirton (1976). As mentioned previously, Kirton

(1976) distinguished two distinct types of style (adaptor vs innovator). This is measured by the Kirton Adaptation-Innovation (K.A.I.) Inventory, consisting of 32 items, and is a widely accepted measure. Jackson (1976) developed an innovation sub-scale of the Jackson Personality Inventory with 20 items. According to Jackson (1976), innovators are creative and inventive individuals, who are creative in their thinking and are willing to develop new innovative solutions and like to improve and appraise new ideas. Hurt et al. (1977), on the other hand, define that innovativeness is a personality trait that expresses one's 'willingness-to-change'. They developed a scale reflecting the trait regarding the willingness to do something new and innovative, which does not refer to actual behaviour, as suggested by Rogers (1983). According to Goldsmith (2011), this approach has a number of advantages: (1) innovativeness can be assessed more methodically due to the self-report approach, (2) it is not innovation-specific and (3) it allows the use of the self-report procedure, which lets researchers envisage innovativeness. Goldsmith (2011) has tested the validity of the Hurt et al. (1977) scale and considerable reliability and validity have been proven, defining four factors of the innovativeness scale: Willing to Try, Creative–Original, Opinion–Leader and Ambiguities–Problems.

Research about the relation of innovativeness and entrepreneurship is based on two main approaches. The first line of research investigates the innovativeness of proven entrepreneurs who have already established their venture. Buttner and Gryskiewicz (1993) showed that successful entrepreneurs as opposed to their managerial colleagues have a more innovative problem-solving style, and are also more willing to change. Carland, Carland, and Stewart (2000) additionally show that multiple venture owners, i.e., serial entrepreneurs, were, among other things, more innovative than the novice ones. The second line of the research examines the influence of innovativeness on entrepreneurial intention. This line of research is based on the presumption that individuals who are already more 'innovative' in terms of willingness to change (Hurt et al., 1977), developing new solutions to problems (Jackson, 1976) or doing things differently (Kirton, 1976), are also more willing to engage in entrepreneurial activities.

Most of the research that investigated an impact of innovativeness on entrepreneurial intentions has utilised the K.A.I. Inventory. Numerous researches indicate that a higher score of innovativeness on the K.A.I. scale increases the probability that the individual will have entrepreneurial intentions (e.g., Marcati, Guido, & Peluso, 2008; Marcic et al., 1990). This is, as Marcati et al. (2008) explain, due to the presumption that adaptors seldom change existing beliefs or policies and see themselves as doing things better and more efficiently than others, while, on the other hand, innovators tend to do things in a different way, initiating fundamental transformations and approaching problems from different angles. Only a few researchers have used the innovativeness scale that was developed by Hurt et al. (1977) in measuring the impact of innovativeness on entrepreneurial intentions. Cools and Van den Broeck (2007) used 10 items of Hurt's scale measuring tolerance for ambiguity, but combined them with the need for a cognitive closure scale developed by Webster and Kruglanski (1994). They found that the tolerance for ambiguity, as one of the dimensions of innovativeness, had a statistically significant influence on intentions of becoming an entrepreneur. We focus on the complete innovativeness scale in our work.

Therefore, based on the above research, we aim to analyse whether individuals with an innovative cognitive style will show more intention towards entrepreneurship. In that sense, we declare our second research proposition (R.P.$_2$):

R.P.$_2$: The innovative cognitive style in interaction with personal attitudes towards entrepreneurship, subjective norms and perceived behavioural control positively influences entrepreneurial intention.

3. Research methodology

3.1. Sample description

To test the defined research propositions, an empirical research through a questionnaire survey was conducted on a sample of students in economics and business studies at bachelor and master level from Slovenia. Students are often used as a sample in the entrepreneurship literature (e.g., Autio et al., 2001; Kolvereid, 1996; Krueger et al., 2000; Sivarajah & Achchuthan 2013; Tkachev and & Kolvereid, 1999). As Liñán (2004) states, students constitute a highly suitable community, since in the near future they will have to make a choice of their professional career. As such, they present a heterogeneous group regarding preferences and intentions and it is possible to study their intentions before the fulfilment of that behaviour. Moreover, prior empirical data among students, i.e., young people in Slovenia, show their strong potential for entrepreneurship and higher entrepreneurial awareness (e.g., Glas & Zupan, 2008; Sebjan, Tominc, & Borsic, 2016; Tominc & Rebernik, 2007). For these reasons, we believe that examining university students' entrepreneurial intentions could provide useful findings for the Slovenian context.

Questionnaires were completed by the total of 330 students. The sample characteristics indicate the dominance of female students (67.6%). The majority of students were at the master level (64.5%). Furthermore, the sample data reveal that the vast majority of students in Slovenia indicate intentions towards entrepreneurship, regardless of the education programme level.

3.2. Research instrument

The questionnaire used for this research was comprised of four parts.

The first part of our instrument measured entrepreneurial intent. We asked our survey participants, by using a 7-point Likert scale (1 = definitely not interested, 7 = extremely interested), to assess their intention of becoming an entrepreneur. We decided to use this approach since it has been applied previously by numerous researchers, such as Krueger et al. (2000), Mortan, Ripoll, Carvalho, and Bernal (2014) and Sánchez (2009).

The second part measured three antecedents of intentions, which, recognised by the theory of planned behaviour, relate to personal attitudes (P.A., consisting of five items), subjective norms (S.N., consisting of three items) and perceived behavioural control (P.B.C., consisting of four items). Items P.A.1–P.A.5 have been adapted from Liñán and Chen (2009), items S.N.1–S.N.3 have been adapted from Kolvereid and Isaksen (2006) and items P.B.C.1–P.B.C.4 have been adapted from Souitaris, Zerbinati, and Al-Laham (2007).

In the third part, the innovative cognitive style was measured by using the global innovativeness scale developed by Hurt et al. (1977) and refined by Goldsmith (2011). Initially, Goldsmith (2011) proposes four dimensions of innovativeness (willingness to try, creative–original, opinion–leader and ambiguities–problems), but with our sample we have extracted only three factors, because opinion–leader and ambiguities–problems merged as one factor (Table 1). One probable reason for such a result is the fact that our research has been conducted using the Slovenian sample, while Goldsmith (2011) conducted his research

Table 1. Rotated factor matrix for six factors.

	Factor					
Item	1	2	3	4	5	6
P.A.1	0.732					
P.A.2	0.861					
P.A.3	0.869					
P.A.4	0.883					
P.A.5	0.870					
S.N.4		0.847				
S.N.5		0.881				
S.N.6		0.872				
P.B.C.1			0.649			
P.B.C.2			0.826			
P.B.C.3			0.709			
P.B.C.4			0.649			
W.T.T.1				0.816		
W.T.T.2				0.815		
W.T.T.3				0.700		
W.T.T.4				0.826		
W.T.T.5				0.825		
W.T.T.6				0.680		
C.O.1					0.766	
C.O.2					0.822	
C.O.3					0.803	
C.O.4					0.815	
C.O.5					0.731	
C.O.6					0.554	
O.L.A.P.1						0.701
O.L.A.P.2						0.761
O.L.A.P.3						0.762
O.L.A.P.4						0.743
O.L.A.P.5						0.734

Factor 1 - Personal attitudes.
Factor 2 - Subjective norms.
Factor 3 - Perceived behavioural control.
Factor 4 - Willingness to try.
Factor 5 - Creative–original.
Factor 6 - Opinion–leader and ambiguities–problems.
Source: Authors' calculations.

using the American sample. Therefore, our innovativeness scale consists of three dimensions: willingness to try (W.T.T., consisting of six items), creative-original (C.O., consisting of six items) and opinion–leader and ambiguities–problems (O.L.A.P., consisting of five items). For all measures used in the second and third part of the research instrument, we asked participant to indicate the extent to which a certain statement applies to them by using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

The fourth part of the instrument encompassed questions regarding personal characteristics of respondents, i.e., their gender and the year of study. In line with previous research (e.g., Wilson, Kickul, & Marlino, 2007) we used gender and the year of study as control variables. Both of them were coded as binomial variables (1, female; 2, male; 1, bachelor; 2, master).

Research instrument details are shown in Table 2.

3.3. Statistical methods

Several statistical methods were used to analyse the collected data using statistical software package SPSS 18.0 for data analysis. The descriptive statistics and reliability data analysis were first conducted.

Table 2. Research instrument description.

			Dependent variable
Entrepreneurial Intention (E.I.)			Have you ever seriously considered becoming an entrepreneur? (1 = definitely not interested, 7 = extremely interested)
		Independent variables	
Gender			Female, Male
Year of study			Bachelor, Master
	Construct	Code	Item
Theory of planned behaviour	Personal attitudes (P.A.)	P.A.1	Being an entrepreneur implies more advantages than disadvantages to me
		P.A.2	Being an entrepreneur would give me great satisfaction
		P.A.3	It is desirable for me to become an entrepreneur
		P.A.4	It is interesting for me to become an entrepreneur
		P.A.5	A career as an entrepreneur is attractive to me
	Subjective norms (S.N.)	S.N.1	I care about what my closest family members think as I decide whether or not to pursue a career as an entrepreneur
		S.N.2	I care about what my closest friends think as I decide whether or not to pursue a career as an entrepreneur
		S.N.3	I care about what people important to me think as I decide whether or not to pursue a career as an entrepreneur
	Perceived behavioural control (P.B.C.)	P.B.C.1	If I wanted, I could easily become an entrepreneur
		P.B.C.2	It is entirely up to me whether or not to become an entrepreneur
		P.B.C.3	As an entrepreneur, I would have sufficient control over my business
		P.B.C.4	There are very few circumstances outside my control that may prevent me from becoming an entrepreneur
Innovative cognitive style	Willingness to try (W.T.T.)	W.T.T.1	I am reluctant about adopting new ways of doing things until I see them working for people around me (Reverse scale)
		W.T.T.2	I rarely trust new ideas until I can see whether the vast majority of people around me accept them (Reverse scale)
		W.T.T.3	I am generally cautious about accepting new ideas (Reverse scale)
		W.T.T.4	I must see other people using new innovations before I will consider them (Reverse scale)
		W.T.T.5	I often find myself sceptical of new ideas (Reverse scale)
		W.T.T.6	I am aware that I am usually one of the last people in my group to accept something new (Reverse scale)
	Creative–original (C.O.)	C.O.1	I consider myself to be creative and original in my thinking and behaviour
		C.O.2	I am an inventive kind of person
		C.O.3	I seek out new ways to do things
		C.O.4	I enjoy trying out new ideas
		C.O.5	I find it stimulating to be original in my thinking and behaviour
		C.O.6	I frequently improvise methods for solving a problem when an answer is not apparent
	Opinion-leader & ambiguities–problems (O.L.A.P.)	O.L.A.P.1	I feel that I am an influential member of my peer group
		O.L.A.P.2	My peers often ask me for advice or information
		O.L.A.P.3	I enjoy taking part in the leadership responsibilities of the groups I belong to
		O.L.A.P.4	I am challenged by ambiguities questions
		O.L.A.P.5	I am challenged by ambiguities and unsolved problems

Sources: Souitaris et al. (2007); Liñán and Chen (2009); Goldsmith (2011).

This is followed by validity analysis in order to check the instrument validity. Content validity was based on the fact that items were adapted from the existing literature. Additionally, as we have a rather large set of variables in order to analyse the essential composition of variables, convergent validity was tested using the explanatory factor analysis.

Third, the non-parametric correlation analyses were conducted to check for potential problems in data due to validity, which could be concluded based on negative or low correlations (de Vaus, 2001).

Finally, estimated linear hierarchical regression models, together with the classification for the regressions, were used to ascertain the significance of certain research propositions and parameters, as well as the model reliability.

4. Data analysis and research findings

4.1. Reliability analysis

The questionnaire items, originally in the English language, were translated into Slovenian. When translating the questionnaire, particular attention was given to translation equivalence. Translation and back-translation into English was done by language experts as well as experts from the field. Additionally, the Slovenian version of the questionnaire was pretested on a selected sample, thus ensuring useful inputs for improving the questionnaire.

In order to test the internal consistency of the scale items, Cronbach's alpha coefficients were computed. As Feldt and Kim (2008) propose, we used the cut-off value of 0.70. All of the calculated Cronbach's alpha coefficients are larger than 0.70, implying internal consistency of the items used (Table 3).

Table 3. Descriptive statistics with Cronbach's alpha.

	n	Minimum	Maximum	Mean	S.D.	Cronbach's alpha
E.I.	330	1	7	3.785	2.034	–
P.A.1	330	1	7	4.300	1.549	0.927
P.A.2	330	1	7	4.500	1.790	
P.A.3	330	1	7	4.080	1.882	
P.A.4	330	1	7	4.580	1.924	
P.A.5	330	1	7	4.420	1.880	
S.N.1	330	1	7	4.400	1.986	0.882
S.N.2	330	1	7	3.570	1.720	
S.N.3	330	1	7	3.900	1.910	
P.B.C.1	330	1	7	5.080	1.739	0.757
P.B.C.2	330	1	7	5.550	1.771	
P.B.C.3	330	1	7	5.650	1.329	
P.B.C.4	330	1	7	4.230	1.629	
W.T.T.1	330	1	7	4.985	1.653	0.880
W.T.T.2	330	1	7	5.139	1.635	
W.T.T.3	330	1	7	3.682	1.641	
W.T.T.4	330	1	7	4.588	1.656	
W.T.T.5	330	1	7	4.815	1.541	
W.T.T.6	330	1	7	5.482	1.658	
C.O.1	330	1	7	5.510	1.198	0.925
C.O.2	330	1	7	5.050	1.334	
C.O.3	330	1	7	5.300	1.321	
C.O.4	330	1	7	5.570	1.351	
C.O.5	330	1	7	5.340	1.416	
C.O.6	330	1	7	4.840	1.497	
O.L.A.P.1	330	1	7	4.910	1.383	0.875
O.L.A.P.2	330	1	7	5.370	1.270	
O.L.A.P.3	330	1	7	5.300	1.396	
O.L.A.P.4	330	1	7	4.830	1.577	
O.L.A.P.5	330	1	7	4.890	1.548	

Source: Authors' calculations.

4.2. Validity analysis

The explanatory factor analysis was performed in order to test convergent validity. The factor analysis was done and the iterated principal axis factor combined with varimax rotation extracted six factors. This is presented in Table 1.

The approach suggested by Costello and Osborne (2005) was used by applying a loading cut-off value in a magnitude from 0.40–0.70. According to the defined criteria, all of the measurement factors were to be retained. Our factor analysis confirmed the existence of six factors.

4.3. Primary data analysis

After descriptive statistics, with the purpose of having a deeper insight into data, a non-parametric Spearman correlation analysis was conducted. Spearman's correlation coefficients showed several very low almost near-zero correlations between some of the analysed items. However, most coefficients indicated a medium-to-low correlation between items represented by the theory of planned behaviour and the innovative cognitive style. The results, although moderate, emphasise the connection between examined items, which indicates a positive connection between different antecedents and the innovative cognitive style. In addition, there is a moderate correlation between entrepreneurial intentions and most of the items, except the items measuring the willingness-to-try dimension of innovativeness.

4.4. Research propositions testing

After reliability and validity testing, our goal was to further analyse if our research propositions are supported in a specific analysed context using the linear hierarchical regression analysis, using factor scores as dependent variables.

Three models were established to test the research propositions of the study. The variables were introduced hierarchically into the equations. The first model (T.P.B. model) included only variables specified by the theory of planned behaviour, i.e., personal attitudes towards entrepreneurship, subjective norms and perceived behavioural control. The second model (I.C.S. model) included only the factors extracted as the dimensions of the innovativeness style, i.e., willingness to try, creative–original, opinion–leader and ambiguities–problems. In our third model (T.P.B. + I.C.S. model) we combine variables specified by the theory of planned behaviour with the added variables of the innovative style. The approach outlined by MacKinnon (2008), which presumes conducting distinct regression equations, was applied.

Table 4 shows results of three linear hierarchical regression analyses. The first regression model that includes only variables specified by the theory of planned behaviour and control variables (T.P.B. model) explains 52.5% of entrepreneurial intentions variance, with the statistically significant influence of gender and a positive influence of personal attitudes, subjective norms and perceived behavioural control. The second regression model that includes only variables specified by the innovativeness style (I.C.S. model) explains only 0.070 of entrepreneurial intentions variance, with a significant influence of gender and a positive influence of variables creative–original, opinion–leader and ambiguities–problems. The third model (T.P.B. & I.C.S. model) confirmed the results of the first two models regarding the impact of independent variables and has contributed to a small increase in the explanation of the variance over the T.P.B. model ($\Delta R^2 = 0.062$), but with a high increase in the explanation of the variance over the I.C.S. model ($\Delta R^2 = 0.467$).

Table 4. Estimated linear hierarchical regression models (T.P.B. model vs I.C.S. model vs T.P.B. & I.C.S. model).

	Dependent variable: Entrepreneurial intentions (1–7)					
	T.P.B. model		I.C.S. model		T.P.B. & I.C.S. model	
Variable	*b*	*p*-value	*b*	*p*-value	*b*	*p*-value
Constant	3.782	0.000***	3.946	0.000***	3.764	0.000***
Theory of planned behaviour						
P.A.	1.374	0.000***	—	—	1.378	0.000***
S.N.	0.214	0.006***	—	—	0.211	0.005**
P.B.C.	0.479	0.000***	—	—	0.397	0.000***
Innovative cognitive style						
C.O.	—	—	0.377	0.001***	0.383	0.000***
W.T.T.	—	—	0.096	0.382	0.111	0.138
O.L.A.P.	—	—	0.201	0.066	0.208	0.005***
Control variables						
Gender	0.390	0,022**	0.584	0.014**	0.310	0.056*
Year of study	0.248	0.132	0.309	0.181	0.313	0.047**
Model reliability						
R	0.724		0.264		0.757	
R^2	0.525		0.070		0.587	
Adj. R^2	0.518		0.055		0.562	
n observations	330		330		330	

*** statistically significant at 1%.
** statistically significant at 5%.
* statistically significant at 10%.
Source: Authors' calculations.

The results indicate that all variables defined by the theory of planned behaviour and the innovative cognitive style have a positive influence on entrepreneurial intentions. However, although positive, the innovative cognitive style has a weak effect when it is taken as the only explanatory aspect. On the other side, variables specified by the theory of planned behaviour have a strong positive effect that remains strong, even when taken as the only explanatory effect.

The models reinforce once again the use of the theory of planed behaviour in predicting entrepreneurial intentions, confirming the statistically significant impact of attitudes towards behaviour, subjective norms and perceived behavioural control on entrepreneurial intentions. Additionally, it confirms the influence and importance of the innovative cognitive style. The stronger the attitudes towards behaviour, subjective norms and perceived behavioural control and the higher the levels of the innovative cognitive style, the more likely it is for an individual to develop entrepreneurial intentions, i.e., to consider becoming an entrepreneur. Based on the presented results we can accept both of our research propositions.

5. Discussion and conclusion

5.1. Concluding remarks

Motivated by the need to additionally explore determinants of entrepreneurial intention in Slovenia, the present research study can be seen as a beneficial resource for academics and practitioners interested in the field of entrepreneurship. Our research data and analysis suggest a positive connection between (1) personal attitudes, subjective norms and personal

behaviour control and entrepreneurial intentions and (2) the innovative cognitive style and entrepreneurial intentions, thus supporting our research propositions. Contributions of our study are as follows.

First, the results of our research revealed that an individual's entrepreneurial intentions are positively related to personal attitudes towards entrepreneurial behaviour, subjective norms imposed by the external environment and perceived behavioural control. In accordance with previous studies (e.g., Astuti & Martdianty, 2012; Izquierdo & Buelens, 2008; Kolvereid, 1996; Krueger & Carsrud, 1993; Krueger et al., 2000; Sivarajah & Achchuthan, 2013; Tkachev and & Kolvereid, 1999), research findings provide a significant support for all three of these elements, showing that they are significantly related to intentions. The outcomes of our country-specific study show that the entrepreneurial intention model can be applied to the Slovenian context. Our model added to this stream of research, showing that the theory of planned behaviour and three different antecedents regarding entrepreneurship can be seen as a good predictor on one's entrepreneurial intention, taking into account the sample of Slovenian students.

Second, the paper sheds new light on the connection between the innovative cognitive style and entrepreneurial intentions. By incorporating the innovative cognitive style, we were able to analyse additional perspectives on the formation of intentionality. The positive nature of the relationship has been found and moderately greater predictability has been achieved when incorporating the innovative cognitive style in our analysis. This indicates that innovative cognition can have a significant influence on entrepreneurial intentions and its influence should not be neglected. However, our findings indicate that an innovative cognitive style has only a weak influence on entrepreneurial intentions when it is taken into account as a solely explanatory factor. This is in accordance with prior research claiming 'that predicting entrepreneurial activities by only situational or personal factors usually resulted in disappointingly small explanatory power and even smaller predictive validity' (Krueger et al., 2000, p. 429). Our contribution also lies in using the scale for measurement of the innovative cognitive style that was developed by Hurt et al. (1977) and upgraded by Goldsmith (2011), in comparison to similar research that used the K.A.I. Inventory.

Third, this paper also contributes by the validity of the scale for measurement of the innovative cognitive style, since it has been mainly used on the American samples. Since our research includes the Slovenian sample and the validity of the scale has been proven, this contributes to this line of research. However, Goldsmith (2011) has identified four factors of innovativeness using an American sample, while our research using the Slovenian sample identified only three factors, which opens the field for future research.

5.2. Research limitations and areas for future research

Several limitations of this research need to be acknowledged. First, data in the research are self-reported and from a common source, thus more liable to subjectivity. All of the data present an individual perception and not actual abilities or behaviour. To get a better insight into entrepreneurial intention, longitudinal studies that would examine entrepreneurial attitudes, cognitive styles, entrepreneurial intentions and actual behaviour over time would yield a greater understanding of how those different variables influence new organisational emergence.

Second, only direct relationships in the model have been analysed. Although our model encompassing mutual influence of all examined variables has a good predicting value, we have to bear in mind other possible influences than can affect entrepreneurial intention. Future studies should investigate the influence of other individual differences, e.g., specific facets of subjective norms, and other additional contextual variables such as economic and situational conditions (e.g., government measures, policies, availability of resources, etc.) or cultural values and norms (especially regarding their influence on subjective norms) that could mediate and affect the observed relationship. This is particularly important to analyse in the context of the Slovenian political, social and economic system, in order to additionally investigate influences on entrepreneurial intentions in Slovenia. In addition, further studies should also examine the impact of entrepreneurial intensions on the innovative cognitive style. Such a recommendation is based on the research conducted by Goldsmith and Kerr (1991), who demonstrated that business students who were exposed to the training in entrepreneurship have increased their mean K.A.I. score. Therefore, it may be that entrepreneurship and innovativeness are mutually inter-related, which should be explored.

5.3. Implications

Both academics and practitioners can benefit from implications of our study, ensuring better overall understanding of how intentions are formed and directed. Our results confirm and give support for further application of intention-based models of the entrepreneurial process, especially regarding the influence of one's cognitive style on intentions. This study opens several future research areas as mentioned above. Research results are also significant for the educators. Contrary to the common belief that innovators are usually also entrepreneurs (Knight, 1989), our research has indicated that solely having the innovative cognitive style does not significantly impact one's decision to become an entrepreneur, although this effect is weakly positive. Therefore, personal attitudes to entrepreneurial behaviour, subjective norms imposed by the external environment and perceived behavioural control still hold a place as the most important factors for driving one's desire to become an entrepreneur. Society in general and especially the education system should strive to provide programmes that encourage young people to believe becoming an entrepreneur is desirable and achievable. Although the creators of the education policy in Slovenia have recognised the importance of entrepreneurship education development (for more details see Dimovski & Znidarsic, 2004), they should be more aware that the educational system can be seen as a main facilitator and source for young people regrading entrepreneurial knowledge and skill development. The entrepreneurial education system in Slovenia should be shaped to provide relevant information and practical experience that can help build, not just individual knowledge and skills, but also individual feelings of self-confidence for engaging into entrepreneurial activities, as well as to create wider social awareness and approval of such activities. Traditional teaching methods should be replaced by modern ones that encourage entrepreneurship development and creation of a more dynamic profile of an entrepreneur. Additionally, economic climate should be oriented towards encouraging innovation and entrepreneurial activities. This is especially true for Slovenia, and other transition countries in Central and Eastern Europe, where economic progress is dependent on small organisations and entrepreneurs who create technological innovations and foster overall economic growth and development.

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