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Effects of decision-making styles on entrepreneurship skills

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Abstract. Entrepreneurship usually has a highly ambiguous atmosphere, and so needs a variety of skills. This study explores the relationships between entrepreneurial skills and decision making styles. In the study relational screening model was used and the study group consisted of 30 students of a private university in Istanbul, Turkey. Two questionnaires which were a 25-item entrepreneurship questionnaire and a 22-item Melbourne decision making questionnaire applied to sample group. Descriptive statistics and all the other tests were conducted by using SPSS version 26 to examine the extent of involvement, significance, direction and degree of the relationships. The results indicated a positive low-level ($r = 0.374$) relationship between entrepreneurship skill and vigilance type of decision making style. Surprisingly, negative low level of relationships ($r = -0.123$ and $r = -0.244$, $p < 0.05$) were found among entrepreneurship skills, hypervigilance and procrastination styles. No significant interaction with buck passing type of decision making style was found. It was found that parental education/job status and entrepreneurship history of family have no effect on entrepreneurship skills. This result supported the idea that entrepreneurship is a learnable skill rather than an innate skill. It is recommended to include active teaching programs for the development both of skills.

Keywords. entrepreneurship skills, decision making styles, relational screening model.

1. Introduction

Economic and social challenges all around the world motivating the idea of developing more entrepreneurial activities become an important target for everybody. Entrepreneurship can be realized with individuals who can look at complex problems and events in a holistic framework and make the right decisions.

The decision is a process that goes through various stages. The stages of the decision-making process should be known in order to reach an effective decision (Karakaya, 2003). Decision-making is to choose the most appropriate one for the purpose of the decision-maker in the face of various alternatives. There are many factors affecting this process. These are objectives, decision-makers, natural conditions, options, the results of options and choosing among options (Tekin, 2204). Individuals' innate abilities in decision-making process are very important and effective parameters. And also it is investigated whether the family experience and back-ground on entrepreneurship has an effect on both of these skills. In the literature, it is stated that "entrepreneurship and decision-making are the features that can be developed with education" which should motivate education institutions to develop education programs to foster these abilities for our world's mutual benefits (Davidsson, 2006).

To reveal the interactions among family background, decision-making styles and entrepreneurship skills, two questionnaires were applied to sample group and the results were analyzed in the application part of the study. Results of the study supported the idea that the entrepreneurship skill is not innate and can be improved by education activities. Similarly, it

is found that there is a significant relation among entrepreneurship skills, vigilance, hypervigilance and procrastination type of decision making styles. No significant interaction with buck passing type of decision making style was detected

2. Materials and method

2.1. Entrepreneurship skills

Richard Cantillon put forward the concept of entrepreneurial thinking in the 17th century against ambiguity. Casson (2010) stated that “after about a century, Adam Smith described entrepreneurial thinking as a frugal and slow but steady progress agent for accumulating capital”. However, Michaels (2012) explained in his study that “entrepreneurship can be thought like any other subject. Above all, entrepreneurial thinking is a mindset that emphasizes learning about the opportunity and making use of the situation in a unique way”.

For this reason, Henry et al. (2003) put forward that “education and training programs constitutes a major role in training future entrepreneurs and developing the skills of existing entrepreneurs”. Gibb (1987) stated that “although the entrepreneurship has cultural and experimental portions, it can be improved gradually by education”. Traditional entrepreneurship carries risks (McGrath & MacMillan, 1995; McGrath & MacMillan, 2000). Therefore, it is necessary to make the right decision for successful entrepreneurship. For the right decision, system thinking skills are needed, which allow to look at the events and problems from multiple perspectives. Entrepreneurship education is considered as an education model to change attitudes, trends and motivations.

Studies report that the traditional entrepreneurship approach should change. According to this understanding, entrepreneurship should be developed with new education and training techniques. Among these techniques, the development of thinking skills, mentoring and group work are widely accepted. Implementation is required for project management and development of budget skills. Therefore, according to Kalyani & Kumar (2011) “it is increasingly recognized that teaching entrepreneurship skills should include interactive teaching requiring skillful instructors”.

Whether or not entrepreneurship is innate is a controversial issue. Despite common view that entrepreneurs are innate, there are also the other studies claiming entrepreneurship is a skill to learn. Drucker (1985) described that “entrepreneurship is a discipline and has been reported to be learnable like any other discipline”. According to this view, it is necessary to review the entrepreneurship trainings given at universities in the training of entrepreneurial individuals, including active methods (Lichtenstein, 2001).

According to Gibb (2011), the entrepreneurship education needs to be changed since the traditional entrepreneurship model can no longer be applied to the modern business environment. Entrepreneurship education which are important for the factors that determine entrepreneurship is emphasized more by the relevant field experts (Balaban & Özdemir, 2008; Berglund & Wennberg, 2006; Patır & Karahan, 2010; Tağraf & Halis, 2008). They stated that entrepreneurship education increases students' chances of becoming a successful entrepreneur, increases the level of knowledge by developing understanding and awareness of entrepreneurship, and promotes positive attitude and tendency. This understanding emphasizes the understanding that entrepreneurs are not born and that they are entrepreneurs. Entrepreneurship education draws attention to the view that it supports young entrepreneur candidates to reveal entrepreneurial potential and encourages them to start their own businesses (Guzmán & Liñán, 2005). All these research results and the results obtained from the study point out entrepreneurship training to be provided at various educational levels and types starting from an early age in developing entrepreneurship trends. In this sense, big tasks fall for

the decision-makers on the subject in terms of effective policies they will produce to realize them.

Entrepreneurship is the power of economy, the source of discovery and imagination. To what extent the competitive private entrepreneurship, which is expressed as a free enterprise in a country, develops, the level of economic prosperity in that country also increases. In countries where there is no entrepreneurship or insufficiency, the level of economic welfare is low (Mueller, 2011). The rapid increase in globalization and competition, the inability of governments to provide appropriate funds for higher education, the increase in the need for qualified manpower and many other factors require universities to turn into an entrepreneurial structure (Greenspan & Rosan, 2006).

2.2. *Decision-making styles*

Everybody gives many decisions every time in his or her daily life. Some of them lead desired results, some of the others give undesirable results (Haan, 2010). Generally, decision making includes a group of people or organizations rather than a person. Sustainable development means prosperity for today's society and future generations. Today, problems faced for sustainability development are quite complex. In order to solve these complex problems, decision making and problems must be viewed from multiple perspectives (Arvai et Al., 2004). Engineering can be considered as a complex process that consists of a successive decisions and does not compromise (Hernandez et al., 1998). Today's ambiguous and complex environment necessitates people and organizations to make better decisions to maintain competitive advantage.

Interdisciplinary approaches are important in educational activities, as real-world decisions often involve more than one area (Solomon & Aikenhead, 1994). From this perspective, students need to be equipped with more skills before entering the labour market or industrial society. However, in educational institutions, students are not properly equipped to solve and decide on disciplinary problems such as sociological issues, engineering and design skills (Zeidler et al., 2009). Scientific decision making is important in developing students' learning abilities, scientific literacy, conceptual understanding, scientific research, attitude and social values. Sadler & Zeidler (2005) stated that "rapid changes are created in our lives with science. In order to keep up with this speed, rational thinking and information technology of learners should be equipped with the decision making abilities".

Saaty (2008) divides decision-making processes into two, intuitively and analytically. Intuitive decisions are not supported by data and are generally made arbitrarily. In some simple, depth-free decision situations, the intuitive approach can be successful. However, when faced with complex decision situations requiring information, decision makers can see that their decisions ultimately deviate from their own value judgments. Contrary to what has been believed for a long time nowadays, it has become a "science" rather than an "art". Yesilyaprak (2008) expressed that "decision making activity is affected by both emotional and cognitive features". Decision making style affects a person's approach, reactions and actions in a decision making process (Thunholm, 2009).

Today, companies have seen innovation as an imperative to survive in competitive environments. Entrepreneurship and decision making skills are very important for the development of innovation (Gelderen & Masurel, 2012). Although there are important studies on the development of these skills in the literature, there are no studies examining them all together.

2.3. Problem statement

The main problem of the study constitutes the question; Is there a relationship among entrepreneurship skills and decision making styles? The sub-problems are defined as below:

1. Is there a relation between entrepreneurship skills and parents' education levels?
2. Is there a relationship between entrepreneurship skills and parents' jobs?
3. Is there a relationship between entrepreneurship skills and families' entrepreneurship history or experiences?
4. Is there a relationship between entrepreneurship skills and decision making styles?

3. Application

3.1. Model of the research

In the study relational screening model was used as research method. The screening model is all of the processes that define a circumstance and is applied to realize learning and to develop desired behaviours in the individual. The relational screening model aims to put forward the existence of co-variation among parameters. The goal of this study is to investigate the effect of family history and experiences about entrepreneurship and decision making styles on entrepreneurship skills.

3.2. Study group

Sample group of the study consisted of 30 students of a private university in Istanbul, Turkey. Students in the study group were selected on voluntary basis.

3.3. Data collection tools

Entrepreneurship questionnaire: In this study, a 25-item entrepreneurship questionnaire developed by Kashif et al. (2016) was used to determine the level of entrepreneurship. Five-point Likert-type questionnaire was used. There are no inverse questions in the test. Cronbach's alpha coefficient was determined by using SPSS as 0.89 (N=100) for the reliability of the questionnaire.³¹

Decision making styles questionnaire: In this study, decision making styles were tested by "Melbourne Decision Making Questionnaire" developed by (Mann et al., 1998). The scale has 22 items and 4 sub-scales as "Vigilance type of decision making", "Hypervigilance type of decision making", "Procrastination type of decision making" and "Buck Passing type of decision making" (Mann et al., 1998).

Validity and reliability of the questionnaire were tested by Deniz (2004). Reliability of the questionnaire was calculated by repetition of the questionnaire and internal consistency methods (Deniz, 2004). The repetition of the questionnaire was applied to 56 university students twice at three-week intervals and reliability coefficients were between $r=0.68$ and $r=0.87$. Internal consistency coefficients of the test applied to 154 attendees and results were found as 0.80 for vigilance type, 0.78 for hypervigilance type, 0.65 for procrastination type and 0.71 buck passing type.

3.4. Data analysis

Entrepreneurship questionnaire (Kashif et al. (2016): The scale was organized with a 5-point Likert-type rating and consisted of 25 questions. Scale was calculated as "Most of the Time" (4 points), "Often" (3 points), "Some of the time" (2 points), "Seldom" (1 point) and "Never" (0 point). Total number is computed by adding up the points for each question. It can range from 0 to 100.

Melbourne decision making questionnaire (Mann et al., 1998): Questionnaire has 4 sub-scales. It is organized with a 3-point Likert-type rating and consisted of 22 questions. Scale was

calculated as "Right" (2 points), "Sometimes Right" (1 point), "Not Right" (0 point). Vigilance Type of Decision Making: It is the situation where the individual searches the necessary information carefully before giving a decision and makes a selection after carefully judging all the alternatives. It is expressed in six items (1, 2, 3, 4, 5, 6) in the questionnaire. Hypervigilance Type of Decision Making: is the situation where the individual refrains from making decisions, lets the giving decision to others, and therefore tries to avoid the decision by transferring responsibility to someone else. This factor is expressed in six items (7, 8, 9, 10, 11, 12) in the questionnaire. Procrastination Type of Decision Making: It is the state of the individual to postpone the decision, delay it and drag it without an acceptable reason. It is expressed in five items (13, 14, 15, 16, 17) in the questionnaire. Buck Passing Type of Decision Making: When an individual is confronted with a decision situation, he or she feels hasty behaviour under time pressure and tries to reach fast answers. It is expressed in five items (18, 19, 20, 21, 22) in the questionnaire.

4. Results

In this study, findings obtained are given in the tables below.

Table 1. Cronbach's Alpha Values Resulted from the Reliability Analysis of the Questionnaires

	Item Number	Cronbach's alpha coefficient
Entrepreneurship Questionnaire	25	0.703
Melbourne Decision Making Questionnaire	22	0.815

According to Table 1, the reliability coefficient of the entrepreneurship questionnaire is 0.703 and the reliability coefficient of the Melbourne decision making styles questionnaire was found as 0.815. The reliability coefficient of 0.70 and above indicates that the measurement tool used is reliable and has internal consistency between items (Nunnally & Bernstein, 1994).

Normality analysis test results of the questionnaires at 95% confidence interval, it was understood that the data showed normal distribution characteristics. Then t-Tests were conducted to understand whether there are significant relationships among them for each of the sub-problem questions of the study.

Table 2. t-Test Results

	N	\bar{X}	Ss	P*
Family Background				
Mother Education Status	30	84.64	6.028	0.708
Father Education Status	30	84.28	6.204	0.795
Mother Job Status	30	83.91	7.082	0.693
Father Job Status	30	84.59	5.292	0.271
Family Entrepreneurship Experiences	30	86.79	3.786	0.018
Decision Styles	N	\bar{X}	Ss	P*
Vigilance	30	10.15	1.864	0.042
Hypervigilance	30	3.83	2.982	0.024
Procrastination	30	4.23	2.691	0.036
Buck Passing	30	5.25	6.920	0.334

*p<0,05

According to the results for mother education status, father education, mother job status and father job status in Table 2 it is understood that there is no significant relationship between

entrepreneurship skills and parents' education and job status. It is not needed to apply further correlation tests to this category. Similarly, according to the value for family entrepreneurship experiences or history shown in Table 2, since p , sig. (2-tailed) = 0.018 value is less than $p = 0.05$, it is understood that there is a significant relationship between entrepreneurship skills and family entrepreneurship experiences.

Similarly, when the results for four types of decision making styles in Table 2 are analysed, it is understood that there is a significant relationship among entrepreneurship skills, vigilance, hypervigilance and procrastination types of decision making styles because p , sig. (2-tailed) values are found as 0.042, 0.024 and 0.036 lower than $p = 0.05$ respectively. However, there is no significant relation between entrepreneurship skills and buck passing type of decision making style since p , sig. (2-tailed) = 0.334 value is greater than $p = 0.05$.

Then, correlation analysis was conducted to understand the direction and coefficient of the significant relationships respectively.

Table 3. Correlation Analysis Test Results Related to Relationship between Entrepreneurship Skills and Family Entrepreneurship Experiences

	N	r*	p
Entrepreneurship Skills vs Family Entrepreneurship Experiences	30	-0.224	0.05

*Pearson correlation

According to the result for family entrepreneurship experiences or history shown in Table 3, it is found that there is a negative, low level significant relationship ($r = -0.224$, $p < 0.05$) among entrepreneurship skills, parents' education and job status and families' entrepreneurship experiences or history. To understand the negative relationship, the survey results have been rescanned and examples of entrepreneurship in the family that have resulted in failure were found. That kind of unsuccessful attempts may explain this opposite relationship.

Table 4. Correlation Analysis Test Results Related to Relationship between Entrepreneurship Skills and Decision Making Styles

	N	r*	p
Entrepreneurship Skills vs Vigilance Decision Making Style	30	0.374	0.05
Entrepreneurship Skills vs Hypervigilance Decision Making Style	30	-0.123	0.05
Entrepreneurship Skills vs Procrastination Decision Making Style	30	-0.244	0.05

*Pearson correlation

When Table 4 is examined for entrepreneurship skill and decision making styles, a positive low level relationship ($r = 0.374$, $p < 0.05$) was detected between entrepreneurship skills and vigilance type which refers to an expected situation. However, negative interactions ($r = -0.123$ and $r = -0.244$, $p < 0.05$) among entrepreneurship skills, hyper vigilance and procrastination types of decision making styles were found. These results are interpreted as reasonable because entrepreneurship relies on taking risks, being courageous and taking initiative by nature.

5. Conclusion and discussion

In this study, the relationships among entrepreneurial skills, decision making styles and family education status, the presence of entrepreneurial history/experience in the family were examined.

5.1. Conclusion and discussion on the relationship between entrepreneurship and decision making styles

In this study, the relationships between entrepreneurship skill and decision making styles was tested. According to the data obtained, while there was a significant relationship among vigilance, hypervigilance and procrastination decision making styles; In the buck passing decision making style, no significant relationship was found. A low-level positive correlation ($r = 0.374$, $p < 0.05$) as can be expected, was detected between entrepreneurship skill and vigilance type of decision making style.

Studies have reported that it provides practical information on how to take advantage of effective decision making processes in entrepreneurship (Rayawan & Efrata, 2017). Sustainable development means prosperity for today's society and future generations. The problems faced by entrepreneurs for sustainable development are quite complex. In order to solve these complex problems, decision making and problems should be viewed from multiple perspectives (Haan, 2010; Arvai et al., 2004).

Interdisciplinary approaches are important in educational practices, like real-world decisions often involve more than one area (Solomon & Aikenhead, 1994). From this perspective, students need to be equipped with more skills before entering the labour market or industrial society. However, in educational institutions, students are not properly equipped to solve and decide on interdisciplinary problems such as life-based sociological issues, engineering and design skills (Zeidler et al., 2009). Scientific decision making is important in developing students' learning abilities, scientific literacy, conceptual understanding, scientific research, attitude and social values. Sadler & Zeidler (2005) stated that "rapid changes are created in our lives with science. In order to keep up with this speed, rational thinking and information technology, everyone might improve decision making skills".

5.2. Conclusion and discussion on the relationship among entrepreneurship skills and parents' education and job status and family entrepreneurship history/experience

There was no significant relationship between entrepreneurship skill and parental education/job status. This result was interpreted as the education and work status of the family had no effect on students' entrepreneurship skill. This indicates that attendees may have entrepreneurial skills independent of their families' socio-demographic and occupational status. It gives the opportunity to develop entrepreneurial skills through education. According to the findings obtained in the study, a significant opposite low-level ($r = -0.224$) relationship was found between entrepreneurship skill and their family entrepreneurship experience. In order to explain this situation, the questionnaire questions were re-examined and it was understood that unsuccessful entrepreneurship experiences were frequently expressed in the free texts written by the participants and this situation caused might have caused this negative relationship.

In the literature, it has been reported that entrepreneurship education is more important than the features that come from the family, which is a traditional approach of developing entrepreneurship. Literature revealed that there was a statistically significant relationship between entrepreneurship education and general entrepreneurship tendency. These results indicate that, depending on the entrepreneurship training received, entrepreneur candidates' attitudes towards entrepreneurship, perceptions of convenience and feasibility to become entrepreneurs, and thus entrepreneurship tendencies can increase positively. According to Korkmaz (2012), entrepreneurship education is stated to be one of the most important factors especially in the formation of attitudes and behaviors of young entrepreneur candidates towards entrepreneurship. Kolvereid & Moen (1997), Matlay (2008), Cruz et al., (2009), Ertuna et al., (2011) determined that "entrepreneurship education had a positive effect on the individual's

tendency towards entrepreneurship and increased it significantly”. Fayolle & Gailly (2013), Fayolle et al., (2006), Miller et al., (2009) and Souitaris et al. (2007) also indicated that “there is a positive and significant relationship between entrepreneurship education and entrepreneurship tendency and sub-dimensions, supporting the results obtained from this research”.

When entrepreneurship is accepted as a discipline, the view that it is innate has changed and the view of entrepreneurship through education has started to be accepted. Drucker (1985) reported that “entrepreneurship is not a magic, a mystery, entrepreneurship is a discipline and can be learned as in any discipline”. This judgment reached on entrepreneurship has changed the perspective and stated the opinions that entrepreneurship education can be done (Kuratko, 2003). In line with the ideas that entrepreneurship is learnable, research and studies on entrepreneurship education have started.

As a result; Today’s global environment, forces everybody to take steps toward developing entrepreneurial skills at every level to sustain competitive advantage in the business environment. Entrepreneurship and decision making skills are very important for the development of innovation. It is recommended to include/increase active teaching programs for the development of both skills in universities and the other institutions. A future study will be useful to compare with initial results after giving entrepreneurship and decision making education.

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