

A Comparative Study on Entrepreneurship Tendencies and Individual Innovativeness Perceptions of Pre-Service Teachers

By

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Abstract

The main purpose of this study is to compare of Entrepreneurship Tendency and Individual Innovativeness Perception of pre-service teachers regarding different genders and departments of the participants. All participants were the senior students attending two departments of Education Faculty; Computer Education & Instructional Technologies and English Language Teaching. In the statistical analysis process; Pearson correlation, Multiple Regression and T-test were used as analyzing techniques. At the end of the study, it was found that all participants had interrogative innovation characteristics. Furthermore, the observed positive relationship between the individual innovativeness tendencies and entrepreneurship of the pre-service teachers can be mentioned as one of the important results of the study.

Keywords: *university students, students' perceptions, students attitudes, social entrepreneurship, teacher education.*

1. Introduction

The processes of globalization and change, which have been in place all over the world since the early 2000s, have brought about a faster pace of information flow and technological development. Innovation and entrepreneurship form the basis of the will to become an information society and of the steps to be taken in this direction. "Girişim", the Turkish word for "enterprise", is defined by the Turkish Language Association's (TDK, Türk Dil Kurumu) dictionary as an attempt, an undertaking, or making preparations for an action to be taken, or considering an action with the purpose of undertaking. In other words, enterprise can be defined as taking a risk and undertaking to do something with the purpose of improving an existing service or product, or making material or other gains by taking an opportunity that arises. By this definition, an "entrepreneur" would be a person of foresight who takes risks and makes use of the opportunities that arise with the purpose of making material or other gains (Morris & Jones, 1999; Casson & Wadson, 2007). Many researchers emphasize that one of the individual factors that affect entrepreneurship is innovativeness. Individuals who do not avoid taking risks to meet society's demands were observed to have a strong tendency for entrepreneurship and an innovative approach to things. It is important that teachers, who will educate the entrepreneurs and the innovative individuals of tomorrow, possess a vision for entrepreneurship and innovative approach themselves. This study examines the entrepreneurial tendencies and individual innovativeness perceptions of prospective teachers, and their relationship to the variables of gender and degree pursued.

Entrepreneurship

Entrepreneurs and entrepreneurship play an important role in the effort to improve the quality of life in diverse areas. The phenomenon of entrepreneurship is seen as a major factor in the development and improvement of many areas of life (Bozkurt, 2007). The concept of entrepreneurship was used for the first time in the 1700s by Richard Cantillon, based upon the French word "entrepreneur", which means "risk taker". Towards the end of the 1700s, Jean-Baptiste Say developed the concept of "entrepreneurship" further, and defined it as the realization of a transformation for a more efficient use of resources (McDaniel, 2002). In the early 20th century, Joseph Alois Schumpeter, known for his theories on economics that shaped the discipline of political economy, defined entrepreneurship as a continuous

process of creation and molding of new markets, by using and combining resources in innovative and improvisational ways (Souitaris, Zerbinati, & Al-Laham, 2007). Schumpeter describes entrepreneurship as “creative destruction”, for entrepreneurs constantly replace products and production methods with new ones (Barringer & Bluedorn, 1999; Andersen, Dahl, Lundvall, & Reichstein, 2006; McCraw, 2007). Rasmussen and Sørheim (2006) argue that entrepreneurship is an important locomotive for economic growth, for it creates new enterprises or adds to the existing ones (Rasmussen & Sørheim, 2006).

There are many internal and external factors that shape the entrepreneurship characteristics of an individual. Hence, entrepreneurship is a field of inquiry taken up by many disciplines like psychology, sociology, business administration, and economics. Because it is taken up in so many disciplines, numerous definitions have been provided for entrepreneurship (Özden, Temurlenk, & Başar, 2009). For example, to an economist, entrepreneurship is the surveying and spotting of opportunities that are present in a market, and the act of turning these opportunities and the existing demand into a business idea, which essentially means bringing resources together and taking risks (Dilsiz & Kölük, 2005); whereas to a psychologist, entrepreneurship is the spending of an effort to get something, to reach somewhere, to try something out, or to share in the authority that others have, which requires a high level of motivation (Yılmaz & Sünbül, 2009). According to Bozkurt (2007), entrepreneurship means having an intuition about the opportunities present in the environment, turning this intuition into a dream, the dream to a project, the project to a reality, and thus making life easier by creating wealth (Bozkurt, 2007). In his Theory of Planned Behavior, Ajzen (1991) treats behavior as a function of belief about that behavior (Ajzen, 1991). In psychology literature, orientation is one of the most important determinants of planned behavior, and entrepreneurship is one of the best examples for planned and intentional behavior (Bird, 1988; Katz & Gartner, 1988; Ajzen, 1991; Krueger & Brazeal, 1994; Graevenitz, Harhoff, & Weber, 2010). For the individual entrepreneur to undertake any action, beliefs, attitudes and orientations about the behavior in question need to be put to work first. According to Bird (1988), orientations guide the entrepreneurs in setting their goals, in communication, in their responsibilities, in organization, and in other important tasks (Bird, 1988). The individual entrepreneur dreams a dream based upon his/her beliefs, puts this dream into action by his/her behavior in a specific field, and “takes risks”.

Factors Affecting Entrepreneurship

From a sociological point of view, entrepreneurship is not only an economic value, but is also a social and cultural phenomenon. Besides its role in economic processes, entrepreneurship is seen as the



Figure 1 Theory of Planned Behavior (Ajzen, 1991)

catalyst of a transformative/innovative process in the societal structure (Aytaç & İlhan, 2007). Different researchers identified different factors for entrepreneurial tendencies, but theoretical studies agree that the personality of the entrepreneur is affected by each of the economic, sociological, and psychological factors, by different degrees (Kahraman, 2002; Casson & Wadeson, 2007; Özden, Temurlenk, & Başar, 2009). Three approaches dominate in the literature on factors affecting entrepreneurship: the individual approach, the environment approach, and the firm approach. The individual approach focuses on the psychological and demographic characteristics of entrepreneurs, whereas the environment approach argues that political, sociological, economic, technological, and cultural factors, among others, affect entrepreneurship. The organizational of the firm approach, on the other hand, focuses on the organizational processes that contribute to the survival and performance of a firm. In other words, it argues that for firms of all sizes to be successful in a competitive environment and to develop, entrepreneurship attitudes and behavior are crucial (Barringer & Bluedorn, 1999; Bratnicki, 2005; Hayton & Kelley, 2006; Sadler, 2008; Özden, Temurlenk, & Başar, 2009).

Various studies in the literature underline the effects of individual characteristics on entrepreneurship (Hunter, 2005; Baron, Markman, & Bollinger, 2006; Casson & Wadeson, 2007; Hartog, Van Praag, & Van Der Sluis, 2010). According to Hayton and Kelley (2006), the characteristics that need to be possessed by an entrepreneur are honesty, openness to new experiences, trust, reliability, risk tolerance and perseverance. (Hayton & Kelley, 2006). According to McDaniel (2002), on the other hand, an entrepreneur needs to have the following qualities:

- Self respect/Self confidence,
- Determination to complete a task and to be successful,
- Perseverance / diligence to keep experimenting
- Ability and willingness to take risks,
- Optimism about the success of the enterprise,
- Creativity: ability to predict the requirements and final outcomes of an enterprise,
- Focus: orientation to keep pursuing a goal,
- Prediction / Intuition: ability to predict events in advance,
- Ability not to succumb to mistakes, but to learn from them
- Ability to take responsibility and to take control, and to accept the results. (McDaniel, 2002).

Of the individual factors that affect entrepreneurship, recent studies place a particular emphasis on psychological traits. **Psychological** factors, such as the need for success, control focus, risk taking tendency, acceptance of uncertainty, self-confidence and **innovativeness** are among the factors that are strongly emphasised. Innovativeness as a factor affecting entrepreneurship was first underlined by Say, but it was Schumpeter who gave utmost importance to the innovativeness of the individual entrepreneur (Özden, Temurlenk, & Başar, 2009). Innovative entrepreneurship requires identifying new markets and organizational or technological opportunities, and combining them with new or existing resources in a creative and original way (Hayton & Kelley, 2006).

Individual Innovativeness

To make it clear what innovativeness means for entrepreneurship, it is first necessary to lay the theoretical foundations of the concept of innovation. Adair (2007) defines the concept of innovation as the creation or introduction of a new idea, method, or tool. Innovation can be creative like in the case of the introduction of a new toy, or developmental like in the introduction of instant picture technology in photography (Curtis & William, 2006). In this context, innovativeness consists of the processes of accepting an innovation and implementing it (Adair, 2007). This process can have individual, organizational, or social dimensions.

Social renovation is a result of the adoption of innovation and innovativeness by individuals who make up society. Masses that do not have the will for social renovation may be left out of all sorts of scientific, sociological, or economic development, and may face disappointment in their future expectations. The role that innovation plays in the development of societies makes scientific study of innovation a must. Studies on innovation may have a multi-dimensional approach, with specific foci on different occupations and individual characteristics. In this sense, scientific studies on innovation have a conceptual diversity that arises from the inter-disciplinary approaches adopted. Universities, with their students and academic personnel, are the centers where these studies are processed, for they are, according to a perspective gaining increasing popularity recently, in a key position for laying the foundations of knowledge accumulation, economic growth, and innovation (Mowery & Sampat, 2005). Developed countries all over the world try to form connections with universities that have strong research capability on industrial innovation (Isaksen & Karlsen, 2010). The inter-disciplinary nature of innovation studies means there are inputs from disciplines as diverse as psychology, sociology, organizational behaviors, economy, and commerce (Jin, Hewitt-Dundas, & Thompson, 2004). Organizational innovation, in particular, has been taken up and analyzed in numerous academic studies (Howorth, Mueller, & Harvey, 2002; Ramstad,

2009; Alegre, Chiva, & Lapiedra, 2009; Castro, Montoro-Sanchez, & Ortiz-De-Urbine-Criado, 2010; Marshall, 2010).

Attitudes of the individuals within an organization play an important role in the innovativeness of the organization. In this context, the relationship between the individual and the organization, and the contribution of individuals to the general innovativeness of an organization emerge as major fields of inquiry in the literature (Casanueva & Gallego, 2010). It would be safe to argue that organizational innovativeness is closely related to values held by individuals. It is the values of the individuals that form the connection between the innovative approach of an organization and the goals of the organization. To understand the individual processes involved in the phenomenon of innovation, researchers have examined the emotional and behavioral responses of individuals to innovation. For example, in the technological acceptance model (Davis, 1989), the complete adoption of an innovation by an individual, or the positive orientation towards adoption, is explained by two basic factors: (a) perceived ease of use, and (b) perceived usefulness. Some studies, on the other hand, find that individual perceptions of innovation are a result of both internal and external factors. For example, Ajzen (1991) explains behavior displayed towards innovation with reference both to individual attitudes and to pre-existing social norms about supporting innovation. Choi (2004) combines all these different views, and groups factors affecting the individual's attitude towards innovation under the following three categories:

- Innovative organizational culture and innovative personal values
- Supportive norms and positive attitudes towards innovation
- Technical support and the necessary technological capability for innovation

Choi (2004) examines these three factors separately, but emphasizes the connections between them and the positive role they play in the formation of the behavior of using innovation, and expresses these connections in a relational figure, shown in Figure 2.

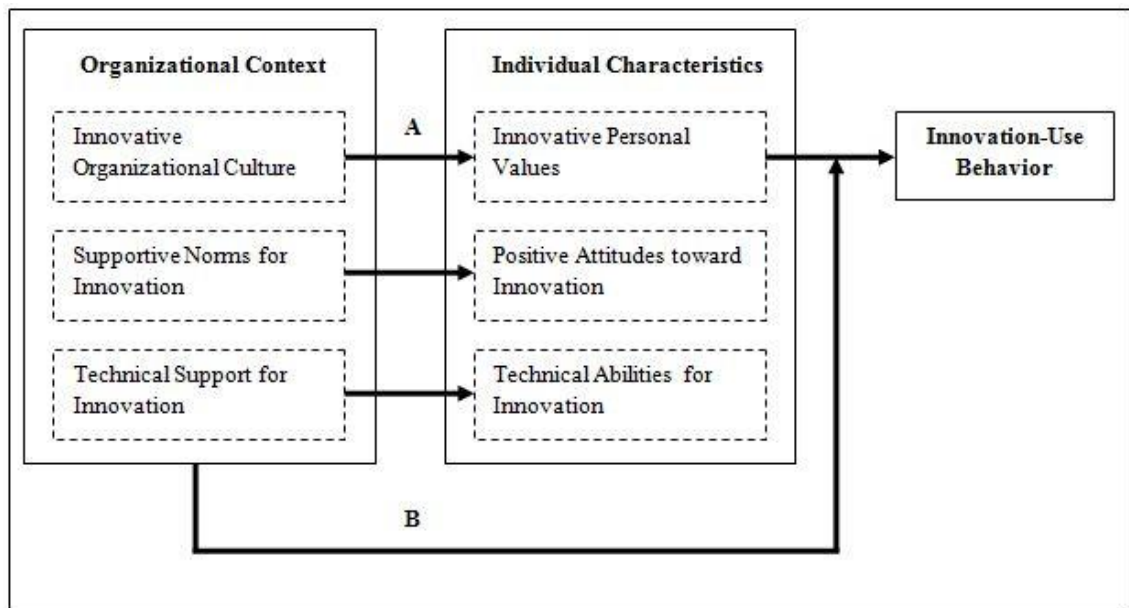


Figure 2 Connections between the factors that lead to the formation of the individual attitude towards innovation (Choi, 2004)

When we look at Figure 2, we can see that the sub-dimensions of the items are presented in two major fields named “organizational context” and “individual characteristics”. Flow “A” in the figure represents the emergence of the behavior of innovation use through individual characteristics that mediate organizational factors, and flow “B” represents the re-organization of the attitude towards the behavior of innovation use through organization effects in the process. This connection between the individual and social perceptions of innovation necessitates conducting studies on the innovation perceptions of individuals from different occupations, if we are to make any predictions on social development.

Teaching and Individual Innovativeness

The teaching profession affects the development, directly or indirectly, of individuals in all other professions in a society. Thus, studying perceptions of the prospective teachers who are preparing to enter the profession would allow us to have some idea about individual innovativeness in all classes and segments of society. The individual innovativeness approach resulted in the creation of innovative practices in student centered learning processes, and in various studies on the subject. Innovation in learning processes is useful both for students and for the teachers (Jaskyte, Taylor, & Smariga, 2009). Ritchhart (2004) lists the effects of an innovative approach on the teacher and on the students as follows:

- Helps teachers maintain their interest in the profession and in professional development,
- Increases the number of curriculum fields in which the students participate,
- Motivates the students to be active,
- Helps students and teachers overcome long settled mental habits,
- Increases the interest of the students in course content (Ritchhart, 2004)

From the point of view of the theories of learning, individual perceptions of innovation are associated, especially in the theory of social cognition, with self-sufficiency and future expectations (Choi, 2004). Learner characteristics like self-sufficiency, goal focus, and caring about the subject are characteristics that vary according to the motivational belief profiles of the individuals (Bong, 2008). Self-sufficiency refers to the belief of the individual in his/her capacity to organize and successfully carry out activities that are necessary to increase his/her performance (Bandura, 1994). Self-sufficiency also effects self-organization and, in this sense, shapes individual motivation. According to Garcia and Pintrich (1994), self-organization consists of beliefs and knowledge, strategies, and outcomes. Beliefs and knowledge refer to personal and conceptual knowledge and beliefs, strategies refer to motivational and cognitive strategies, and outcomes refer to quantitative and qualitative outcomes (Garcia & Pintrich, 1994). Boekaerts (1997) proposes a self-organization model that consists of six components. These six components are organized under two sub-dimensions called cognitive self-regulation and motivational self-regulation, each of which contains three components. The cognitive self-regulation sub-dimension contains the components of cognitive regulatory strategies, cognitive strategies and content area, and the sub-dimension of motivational self-regulation contains the components of motivational regulatory strategies, motivational strategies, metacognitive knowledge and motivational beliefs (Boekaerts, 1997). Looking at these theoretical relations and assessments, the close relationship between the phenomenon of individual innovativeness on the one hand and education and teaching processes on the other can be examined more systematically.

Teacher training institutions have an important role to play in the development of a vision for entrepreneurship and innovation perception among prospective teachers, and school administrators have an important role to play in supporting the entrepreneurial tendencies of the teachers. In particular, universities can make a contribution to entrepreneurship by both directly training entrepreneur candidates and indirectly commercializing studies and preparing the ground for new enterprises (Rasmussen & Sørheim, 2006). In modern education systems, it is of utmost importance that teachers display entrepreneurial behavior and have an innovative approach. The current education system in Turkey supports modern education and entrepreneurship in theory, but there are a myriad of problems in practice (Polat & Aktop, 2010).

In this context, this study examines and compares the individual innovativeness and entrepreneurship tendencies of prospective teachers pursuing degrees in various fields. Findings from the data collected are analyzed and an effort is made to come up with inferences for the future.

2. Method

Study Group

The study group for the research consisted of a total of 341 students attending the Computer Education and Instructional Technology (CEIT) and English Language Teaching (ELT) Departments of the Faculty of Education of Yıldız Technical University in the 2010-2011 fall semester. To achieve research equivalence, scales were applied to the groups simultaneously in a one-week period in the same semester. Demographic data about the participants are presented in Table 1.

Table 1: Distribution of participating students by gender and department

Departments	Gender				Total	
	Female		Male		f	%
	f	%	f	%		
CEIT	69	20.24	118	34.60	187	54.84
ELT	113	33.14	41	12.02	154	45.16
Total	182	53.38	159	46.62	341	100

As shown in Table 1, a total of 187 (54.84%) CEIT students participated in the study, 118 (34.60%) of them male and 69 (20.24%) female, and a total of 154 (45.16%) ELT students, 113 (33.14%) of them female and 41 (12.02%) male. Looking at these data, we can say that participants were distributed about equally by gender and department.

Data Collection Tools

The "University Students Entrepreneurship Scale" and the "Individual Innovativeness Scale" were used as data collection tools in this study. An analysis of the findings from these scales will be presented in this section.

University Students Entrepreneurship Scale

The study uses the "University Students Entrepreneurship Scale" (USES) developed by Yılmaz and Sünbül (2009) to identify the entrepreneurial characteristics of university students. The scale consists of a total of 36 items with 5-point responses ranging from "Very often" (5) to "Never" (1). The "Principal Components Analysis" conducted to identify the sub-components of the scale showed that all the items of the scale are grouped under a single factor. In their calculations, Yılmaz and Sünbül (2009) find the Cronbach's alpha coefficient of internal consistency for the scale to be 0.90 (Yılmaz & Sünbül, 2009).

In order to test the criterion validity of the scale, the Rathus Assertiveness Inventory was used. The Spearman Brown - rho - (Rank Correlation) was used to measure the consistency between the two scales, and the rho coefficient was found to be 0.33. This finding indicates a relationship that is significant at the 0.01 level of significance. The "University Students Entrepreneurship Scale" was found to be consistent with the "Rathus Assertiveness Inventory" in terms of the measurements made. The highest score one can receive from the scale is 180, and the lowest is 36. Scores in the range of 36-64 points were interpreted as "Very low entrepreneurship", the range of 65-92 points was interpreted as "Low-entrepreneurship", the range of 93-123 points as "Middle-level entrepreneurship", the range of 124-151 points as "High-entrepreneurship", and the range of 152 - 180 points was interpreted as "Very high-entrepreneurship" (Sünbül & Yılmaz, 2009).

Individual Innovativeness Scale

The study also makes use of the “*Individual Innovativeness Scale*” (IIS) developed by Joseph and Cook (1977) and adapted for Turkish by Kılıçer and Odabaşı (2010). The scale was originally developed in English. The factor analyses conducted on the scale, which consists of a total of 20 statements, showed that there were four separate factors. These factors were named "Resistance to change", "Opinion-leading", "Openness to experiences" and "Risk-taking". Total variance explained by the four factors, concerning the qualities the scale measures, was found to be 55.52%. Of the items of the scale, 12 items (1, 2, 3, 5, 8, 9, 11, 12, 14, 16, 18 and 19) are positively worded, and 8 items (4, 6, 7, 10, 13, 15, 17 and 20) are negatively worded.

The innovativeness score of the scale is calculated by subtracting the total score for negative items from the total score for positive items, and then adding 42 to the remaining score. The lowest score one can receive from the scale is 14, and the highest score one can receive from the scale is 94. Individuals can be categorized in terms of innovativeness based upon the scores they receive from the scale. Individuals with scores above 80 are defined as “Innovators”, those with scores in the range of 69 to 80 are defined as “Early Adopters”, the range of 57 to 68 is defined as “Early Majority”, the range of 46 to 56 is defined as “Late Majority”, and those with scores below 46 are defined as “Traditionalists” (Kılıçer & Odabaşı, 2010). Validity and reliability analyses for the Turkish version of the scale were made based upon the responses of 343 university students. The internal consistency coefficient for the entire questionnaire was found to be 0.82, and the consistency coefficients for the sub-components were found to be respectively 0.81, 0.73, 0.77 and 0.62. The test - re-test reliability coefficient of the scale questionnaire was found to be 0.87. These analyses indicate that the Turkish version of the scale has levels of validity and reliability that are appropriate for conducting scientific studies (Kılıçer & Odabaşı, 2010).

Data Analysis

Descriptive analysis was used to identify the mean values of and standard deviation in teacher candidates' entrepreneurial behavior and perception of individual innovativeness. Scores received from the entrepreneurship scale and the individual innovativeness scale were categorized by gender and department on the basis of the assessment criteria for the scales, and related frequencies and percentages were calculated.

Correlation analysis was used to examine the relationship between entrepreneurship behavior and the perception of individual innovativeness, and multiple regression analysis was used to examine the effects of the sub-components of the individual innovativeness scale on entrepreneurship behavior. To make the calculations, SPSS 16.0 statistical software was used. In the section on *Results and Interpretations*, statistical analyses conducted for data from the two scales are presented in tables.

3. Results and Interpretations

Scores received by prospective teachers from the IIS and the USES, classified according to the relevant assessment criteria, are presented in Tables 2 and 3 by department and by gender.

Table 2: Scores for sub-components of the individual innovativeness scale

Departments	Individual Innovativeness Scale Sub-Dimensions	Male		Female	
		\bar{X}	Sd	\bar{X}	Sd
CEIT	Resistance to Change	17.66	5.34	18.48	4.72
	Opinion- leading	18.58	3.39	18.77	2.80
	Openness to Experiences	19.91	2.77	19.44	2.46
	Risk-taking	7.38	1.66	6.94	1.53
	Scale Total	63.55	9.31	63.63	8.19
ELT	Resistance to Change	17.80	5.59	17.98	6.17
	Opinion- leading	19.70	2.96	18.49	2.88
	Openness to Experiences	20.28	20.10	19.73	2.58
	Risk-taking	7.63	1.50	6.62	1.77
	Scale Total	65.41	7.70	62.82	9.82

Looking at Table 2, we can see that CEIT students received a mean score of 63.55 from the entire scale, and ELT students received a mean score of 65.41. Individuals with scores between 57 and 68, as mentioned above, are defined as the “Early Majority” (Kılıçer & Odabaşı, 2010). Thus, the participants, when considered as a whole, can be said to be part of the “Early Majority”. Table 3 presents scores received from the entrepreneurship scale by department and gender. An independent samples t-test was conducted to see whether there are significant differences between the scores received by the two genders from the IIS sub-components. The results of this test are presented in Table 3.

Table 3: Results of the independent samples t-test for scores from the IIS sub-components by gender

Dimensions	Variable	N	\bar{X}	Sd	df	t	p
Resistance to Change	Female	182	18.17	5.68	339	.782	.435
	Male	159	17.69	5.42			
Opinion-leading	Female	182	18.59	2.86		.836	.404
	Male	159	18.87	3.33			
Openness to Experiences	Female	182	19.62	2.54		1.38	.169
	Male	159	20.01	2.62			
Risk-taking	Female	182	6.74	1.69	3.90	.000	
	Male	159	7.44	1.62			

Table 3 shows that scores from 3 IIS sub-components do not differ significantly from each other by gender ($p > .01$), whereas there is a significant difference between scores from the “Risk taking” sub-component by gender ($p < .01$). Scores received by the participants from the entrepreneurship scale are presented in Table 4 by gender and by department.

Table 4: Scores from the entrepreneurship scale

Departments	Male		Female	
	\bar{X}	Sd	\bar{X}	Sd
CEIT	139.00	17.57	133.06	16.03
ELT	137.07	18.29	135.98	15.59

Table 4 shows that scores received by male and female students of the two departments vary between 133 and 139. In the interpretation of USES scores, the range of 124-151 is interpreted as “*High entrepreneurship*” (Yılmaz & Sünbül, 2009). Thus, considered as a whole, teacher candidates who participated in the study can be said to have a tendency for “*High entrepreneurship*”.

To test whether there is a relationship between the scores teacher candidates received from the IIS and its sub-components, and the scores they received from the USES, Pearson’s correlation coefficient was used. Results of this analysis are reported in Table 5.

Table 5: Results of the correlation analysis conducted to test the relationship between scores from IIS and its sub-components and scores from USES

USES	r	IIS (Total Score)	IIS (Resistance to Change)	IIS (Opinion - leading)	IIS (Openness to Experiences)	IIS (Risk- taking)
		p	.671	.264	.688	.695
		.000	.000	.000	.000	.000

Table 5 shows that there is a strong and significant relationship between the entrepreneurship behavior and innovation perceptions of prospective teachers ($r=.671$; $p<.01$). It is also observed that the relationship between entrepreneurship behavior on one hand and each of the sub-components of the individual innovativeness scale on the other, are statistically significant at the .01 level of significance. Looking at the determination coefficients (r^2), we can see that 6.9% of the total variance in entrepreneurship behavior is accounted for by the variable "Resistance to Change" ($r^2=0.069$), 47.3% is accounted for by the variable "Opinion-leading" ($r^2=.473$), 48.3% by the "Openness to experience" variable ($r^2=.483$), and 19.3% is accounted for by the variable of "Risk-taking" ($r^2=.193$).

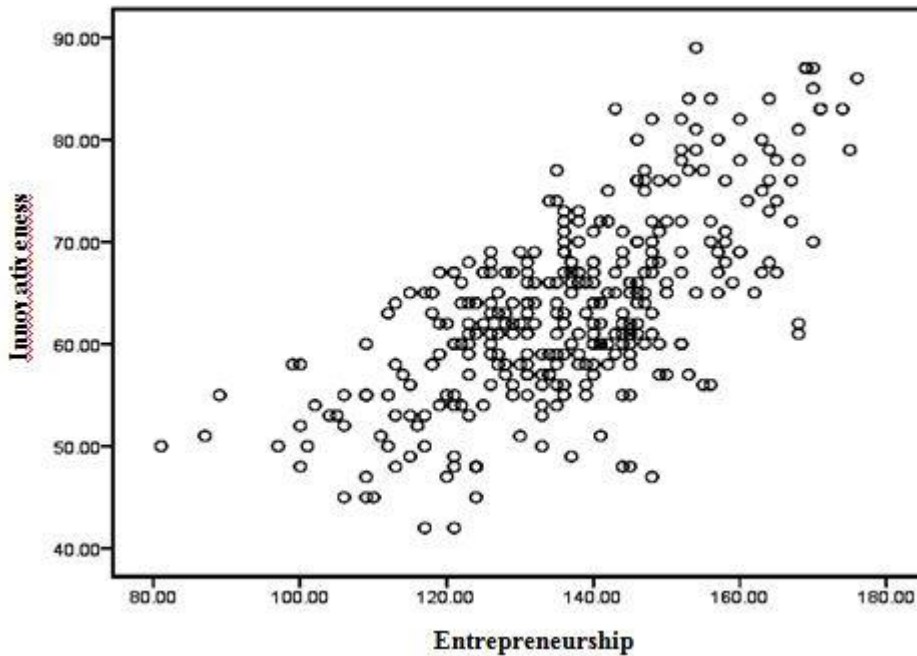


Figure 3 Scatterplot of the Correlation between Individual Innovation Scores and Entrepreneurship Scores

Figure 3 visualizes the directly proportional relationship between the scores from Individual innovativeness and Entrepreneurship scales. Table 6 reports the results of the regression analysis conducted to see whether the regression coefficients of the IIS sub-components in predicting the entrepreneurship behavior are significant or not.

Table 6: Results of the multiple regression analysis conducted to predict entrepreneurship behavior

Variables	B	Standart Error	β	T	p	Zero-order r	Partial r
Constant	33.651	4.603	-	7.311	.000	-	
Resistance to Change	0.201	0.108	0.066	1.866	.063	.264	.101
Opinion-leading	2.240	0.230	0.410	9.723	.000	.688	.469
Openness to Experiences	2.511	0.299	0.384	8.409	.000	.695	.417
Risk-taking	1.080	0.385	0.109	2.809	.005	.439	.151
R=	.784	R ² =	.614				
F _(4,336) =	133.843	P =	.000				

When the binary and partial correlations between IIS sub-components and entrepreneurship behavior reported in Table 6 are examined, it can be seen that Resistance to Change has a significant but small effect on entrepreneurship ($r=.264; p<.01$), and that this effect is still significant but even smaller when the other three sub-components are controlled ($r=.101; p<.01$). The Opinion-leading sub-component has a significant and moderate effect on entrepreneurship ($r=.688; p<.01$), and this effect is still significant and moderate, though smaller, when the other three sub-components are controlled ($r=.469; p<.01$). The Openness to Experiences sub-component has a significant and moderate effect on entrepreneurship ($r=.695; p<.01$) when the binary correlation is examined, and this effect is still significant and moderate, though smaller, when the other three sub-components are controlled ($r=.417; p<.01$). The Risk-taking sub-component has a significant and moderate effect on entrepreneurship ($r=.439; p<.01$), and this effect is still significant but much smaller when the other three sub-components are controlled ($r=.151; p<.01$).

Results of the regression analysis conducted show that there is a strong and significant relationship between the 4 IIS sub-components on one hand, considered together, and entrepreneurship behavior on the other ($R=.784; R^2=.614; p<.01$). Together, the four IIS sub-components explain 61.4% of the total variance in entrepreneurship behavior. IIS sub-components are ranked, in terms of their relative importance in predicting entrepreneurship behavior as measured by standardized regression coefficients (β), in the following order: Opinion-leading, Openness to Experiences, Risk-taking and Change Resistance. Results of the t-test on the significance of regression coefficients shows that the Resistance to Change sub-component does not have a significant effect on entrepreneurship ($T=1.866; p>.05$), whereas, the remaining three sub-components are important predictors of the entrepreneurship behavior.

4. Discussion and Conclusion

This study examined the relationship between the individual innovativeness perceptions of teacher candidates, and their entrepreneurship tendencies. With this purpose, first, the individual innovativeness perceptions of the participants were measured, and it was found that on the whole, the participants were part of the “Early Majority”. Individuals who are members of the early majority tend to adopt new ideas earlier than other individuals in the society, are rarely in a position of leadership in their communication with peers, and play an important role in the process of the dissemination of new ideas, for they are not too early nor too late to adopt new ideas (Rogers, 1995). Within this framework, it is a promising finding that prospective teachers, who will be education leaders in the future, are part of the early majority with their individual innovativeness characteristics. Another finding of the study, that the participants display high entrepreneurship, is also a promising finding considering their educational roles in the future.

In the second part of the analyses for the entire group, the relationship between the scores the participants received from the individual innovativeness scale and from the entrepreneurship scale was examined. For this analysis, Pearson correlation coefficients of the scores from the two scales were compared. Results of the analysis showed that there is a strong relationship between entrepreneurship behavior and innovativeness perceptions of the teacher candidates. What is more, the entrepreneurship behavior of the prospective teachers was found to have a significant relationship with each of the four sub-components of the individual innovativeness scale. This finding parallels Wagner, Gorgievski and Rijdsijk’s (2010) finding that entrepreneurship is closely related to high independence, risk taking, innovativeness, and leadership. In terms of their importance in affecting entrepreneurship behavior, IIS sub-components were ranked in the following order: “Opinion-leading”, “Openness to experiences”, “Risk-taking” and “Resistance to Change”. The results of the t-test analysis on the significance of regression coefficients showed that the “Resistance to Change” sub-component does not have a significant effect on entrepreneurship behavior, whereas the remaining three sub-components are important predictors of entrepreneurship. Entrepreneurial character, traditionally defined in the context of commercial settings, is present in educational settings as well, together with perceptions of individual innovativeness. The sub-components of the individual innovativeness scale were examined by gender, and it was found that male participants received a significantly higher mean score for the “Risk taking” sub-component compared to

the female participants. This finding parallels Hyrsky & Tuunanen's (1999) finding, but contradicts the finding by Sonfield et al. (2001). The difference may be attributed to different sample groups and different levels of learning.

This study emphasized the importance of innovativeness, and thus of entrepreneurship, for teachers to improve their knowledge and skills on a continuous basis, to keep themselves motivated for ensuring strong student participation in class work, and to be able to break the traditional perceptions concerning teachers and students. The study also called attention to the strong effect that perceptions of innovativeness have on entrepreneurship behavior. The findings of the study can be used in faculties of education to train teachers who are more innovative and have stronger entrepreneurship skills, so that they can educate students who will be responsible for scientific, sociological, and economic development in the future.

Although it came up with a number of important findings, the study also had certain limitations. First of all, students participating in the study came from only one faculty of education. With the inclusion of students from more faculties of education, results would be more generalizable. Another limitation of the study was that it was conducted in a very short period of time. Conclusions reached by studies conducted over an extended period of time with repeated measurements would be more certain.

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