PAPER DETAILS

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IS THERE A RELATION BETWEEN ENTREPRENEURIAL PERCEPTIONS AND NATIONAL INNOVATION PERFORMANCES? THE POSITION OF TURKEY IN EUROPE [*]

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Abstract

This study attempts to answer the main research question: "Is there a correlated relation between entrepreneurial perceptions and national innovation performances within European countries?" In this scope; "perceived entrepreneurial opportunities", "perceived capabilities", "fear of failure" and "entrepreneurial intentions" are discussed as "entrepreneurial perceptions". National innovation performances of EU and non-EU member countries were gathered from "The Innovation Union Scoreboard 2011". Specifically, Turkey's position in Europe for this subject was analysed.

Keywords: Entrepreneurship, entrepreneurial perceptions, perceived entrepreneurial opportunities, perceived capabilities, fear of failure, entrepreneurial intentions, and national innovation performances.

GİRİŞİMCİLİK ALGISI İLE ULUSAL İNOVASYON PERFORMANSI ARASINDA BİR İLİŞKİ VAR MIDIR? TÜRKİYE'NİN AVRUPA'DAKİ KONUMU

Öz

Bu çalışma "Avrupa ülkeleri genelinde girişimcilik algıları ile ulusal inovasyon performansları arasında korelatif bir ilişki var mı?" sorusuna yanıt bulma amacını taşımaktadır. Bu kapsamda; "algılanan girişimcilik fırsatları", "algılanan kabiliyetler", "başarısız olma korkusu" ve "girişimcilik niyeti" alt boyutları "girişimcilik algıları" olarak ele alınmıştır. AB üyesi olan ve olmayan Avrupa Ülkelerinin ulusal inovasyon performansları, Avrupa Komisyonunca hazırlanan "İnovasyon Birlik Skorbordundan" temin edilmiştir. Türkiye'nin araştırmaya konu değişkenler açısından Avrupa içerisindeki konumu özellikle analiz edilmiştir.

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Anahtar Kelimeler: Girişimcilik, girişimcilik algıları, algılanan girişimcilik fırsatları, algılanan kabiliyetler, başarısız olma korkusu, girişimcilik niyeti, ulusal inovasyon performansı

1. Introduction and Emergence of the Research Question

According to Drucker, "*innovation is the specific function of entrepreneurship*" (Drucker, 1985, p.20). We cannot deny the relation between entrepreneurship and innovation. According to Kuratko and Hodgetts, "*innovation is the process by which entrepreneurs convert opportunities into marketable ideas. It is the means by which they become catalysts for change* (Kuratko and Hodgetts, 1998, p.122).

There is no doubt that Schumpeter is a pioneer of the term innovation. According to him; *"To produce means to combine materials and forces within our reach. To produce other things or the same things by a different method, means to combine these materials and forces differently"* (Schumpeter, *tr.* Redvers Opie, 1978, p.65). He used the concept "new combinations" for this explanation. We can clearly see a strong relation between the meaning of innovation that we use today and Schumpeter's "new combinations". According to Schumpeter, these "new combinations" can be; a new good that is one with which consumers are not yet familiar; a new method of production, that is one not yet tested by experience in the branch of manufacture concerned; a new market; a new source of supply of raw materials or half-manufactured goods; or a new organization of any industry. As can be seen clearly, innovation cannot be related only with "new products" (Türker, 2012, pp.147–159).

Drucker clearly distinguish the concepts; "entrepreneurship" and simply "launching a new venture". Every new small business is not entrepreneurial or do not represent entrepreneurship. He emphasizes that, creation of new markets and new customers are the basic qualifications of "entrepreneurship" (Drucker, 1985, pp.21-22). Shane and Venkataraman also emphasize that "*entrepreneurship does not require, but can include the creation of new organizations*" (Shane and Venkataraman, 2000, p.219). These two above mentioned approaches of Schumpeter and Drucker -when combined- can be considered as an evidence of the relation between innovation and entrepreneurship.

According to Shinnar et.al, the culture of a nation shapes entrepreneurial perceptions and intentions of people live in that nation. And consequently, entrepreneurial perceptions and intentions differ across nations (Shinnar et.al, 2012, pp.465-466). In addition, we know that; environmental conditions and entrepreneurial perceptions play an important role in start-up processes (Edelman and Yli-Renko, 2010, p.835). If the entrepreneurial perceptions and intentions differ across nations than it is logical to think that this difference may correlate with the outputs of entrepreneurship like innovation performance of these nations. This proposition is the starting point of this study.

Measuring innovation performances is difficult to do well with a single measure because innovation can be achieved in many ways (Shapiro, 2006, p.42). According to Brouwer and Kleinknecht, innovation measurement formerly tended to be confined to Research and Development (R&D) activities. This is frequently considered unsatisfactory since the innovation process also requires a number of non-R&D activities such as the acquisition of patents and licenses, design, training of personnel, market research and investment in new production capacity. While such non-R&D expenditure may be of considerable quantitative importance, innovation policy as well as theorizing and modelling still has to rely on R&D statistics as the major source of information systematically collected over time and across all OECD countries. In many of these countries, information about non-R&D expenditure on innovation is virtually non-existent (Brouwer and Kleinknecht, 1997, p.1235).

The Innovation Union Scoreboard (IUS) is the instrument developed at the initiative of the European Commission, under the Lisbon Strategy, to provide a comparative assessment of the innovation performance of EU Member States. The IUS includes innovation indicators and trend analyses for the EU27 Member States, as well as for Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Norway, Serbia, Switzerland and Turkey. It also includes comparisons based on a more reduced set of indicators between the EU27 and 10 global competitors (Innovation Union Scoreboard 2011). The innovation indicators in IUS 2011 are assigned to three main dimensions and shown in Table 1. In this study, "European countries' innovation performances" index from IUS 2011 was used to measure national innovation performances.

Table 1: IUS 2011 Indicators

1. ENABLERS
1.1 Human resources
1.2 Open, excellent and attractive research systems
1.3 Finance and support
2. FIRM ACTIVITIES
2.1 Firm investments
2.2 Linkages & entrepreneurship
2.3 Intellectual assets
3. OUTPUTS
3.1 Innovators
3.2 Economic effects

As seen in the figure below, Turkey as a non-EU member country has the least national innovation performance after Bulgaria, Latvia, Lithuania, Romania and Former Yugoslav Republic of Macedonia. All those countries labelled as "Modest innovators" in IUS 2011.

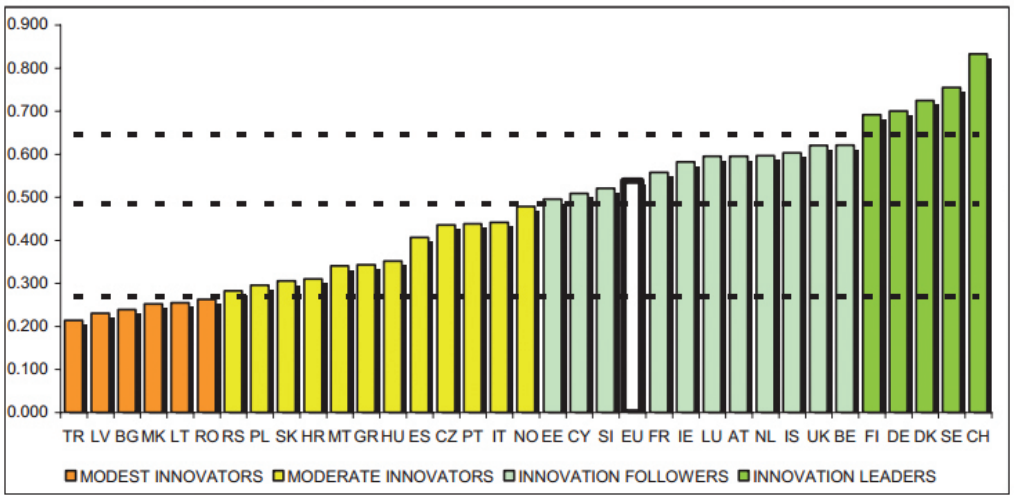

Figure 1: European Countries' Innovation Performances (Innovation Union Scoreboard 2011).

In order to find the answer of the question that; "What are the main factors that correlate with the low national innovation performances in Turkey and similar other -*modest innovator*- countries?" we proposed that there can be potential linkages between entrepreneurial perceptions (e.g. perceptions of potential entrepreneurs about opportunities and capabilities in their own country) and innovation performance of that nation.

2. Hypotheses of the Study

This study will attempt to answer the main research question: "Is there a correlated relation between entrepreneurial perceptions and national innovation performances?" Therefore, the main variables of this study are; the entrepreneurial perceptions of both entrepreneurs and potential entrepreneurs in a country and national innovation performances. The main hypothesis of this study is;

H_0: There is not a significant correlation between entrepreneurial perceptions and national innovation performances.

H_1: There is a significant correlation between entrepreneurial perceptions and national innovation performances.

The sub-hypotheses of this study are as follows;

$H_{1.0}$: There is not a significant correlation between "perceived entrepreneurial opportunities" in a country and "national innovation performance" of that country.

$H_{1.1}$: There is a significant correlation between "perceived entrepreneurial opportunities" in a country and "national innovation performance" of that country.

$H_{2.0}$: There is not a significant correlation between "perceived capabilities of individuals" in a country and "national innovation performance" of that country.

$H_{2.1}$: There is a significant correlation between "perceived capabilities of individuals" in a country and "national innovation performance" of that country.

$H_{3.0}$: There is not a significant correlation between "perceived fear of failure" in a country and "national innovation performance" of that country.

$H_{3.1}$: There is a significant correlation between "perceived fear of failure" in a country and "national innovation performance" of that country.

$H_{4.0}$: There is not a significant correlation between "entrepreneurial intentions" in a country and "national innovation performance" of that country.

$H_{4.1}$: There is a significant correlation between "entrepreneurial intentions" in a country and "national innovation performance" of that country.

3. Methodology of the Research

This study can be defined as a quantitative research. The sample of this study is 17 foremost member countries of EU27 with 2 non-EU27 countries; Norway and Turkey (as of 2012). Data was collected from these secondary data sources; PRO INNO Europe (The innovation policy initiative of European Commission), and The Global Entrepreneurship Research Association (GERA).

The Global Entrepreneurship Monitor was conceived in 1997 by Michael Hay of London Business School (LBS) and Bill Bygrave of Babson College. LBS and Babson funded a prototype study that year. Ten national teams conducted the first GEM Global study in 1999 with Paul Reynolds as the principal investigator. The Global Entrepreneurship Research Association (GERA) was formed in 2004 to serve as the oversight body for GEM (Bosma, et.al, 2012).

There are four main dimensions in GEM Global study; three of them related with individuals' perceptions; "opportunities, capabilities and fear of failure". And the fourth one is "entrepreneurial intentions". The "perception of entrepreneurial opportunities" reflects the percentage of individuals who believe there are opportunities to start a business in the area they live in. "Perceived capabilities" reflect the percentages of individuals who believe they have the required skills, knowledge and experience to start a new business. The measure of "fear of failure" applies to those who perceive opportunities only. Finally, "entrepreneurial intentions"; defined by the percentage of individuals who expect to start a business within the next three years differ widely across the economies in each stage of economic development (Bosma, et.al, 2012). In this study, the findings of GEM Global study were used to measure "entrepreneurial perceptions".

4. Findings

In the first sub-hypothesis, we proposed that there is not a significant correlation between "perceived entrepreneurial opportunities" in a country and "national innovation performance" of that country. We used Spearman's Nonparametric Correlation test for the first sub-hypothesis and as a result $H_{1.0}$ was not supported. Results are shown in Table 2.

Table 2: H_1 Correlations Table

			National Innovation Performance	Perceived opportunities
Spearman's rho	National Innovation Performance	Correlation Coefficient	1,000	,679(**)
		Sig. (2-tailed)	.	,001
		N	23	19
	Perceived opportunities	Correlation Coefficient	,679(**)	1,000
		Sig. (2-tailed)	,001	.
		N	19	19

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

As a result we found significant positive correlation between "perceived entrepreneurial opportunities" in a country and "national innovation performance" of that country. Scatter diagram of the cluster analysis is shown in Figure 2.

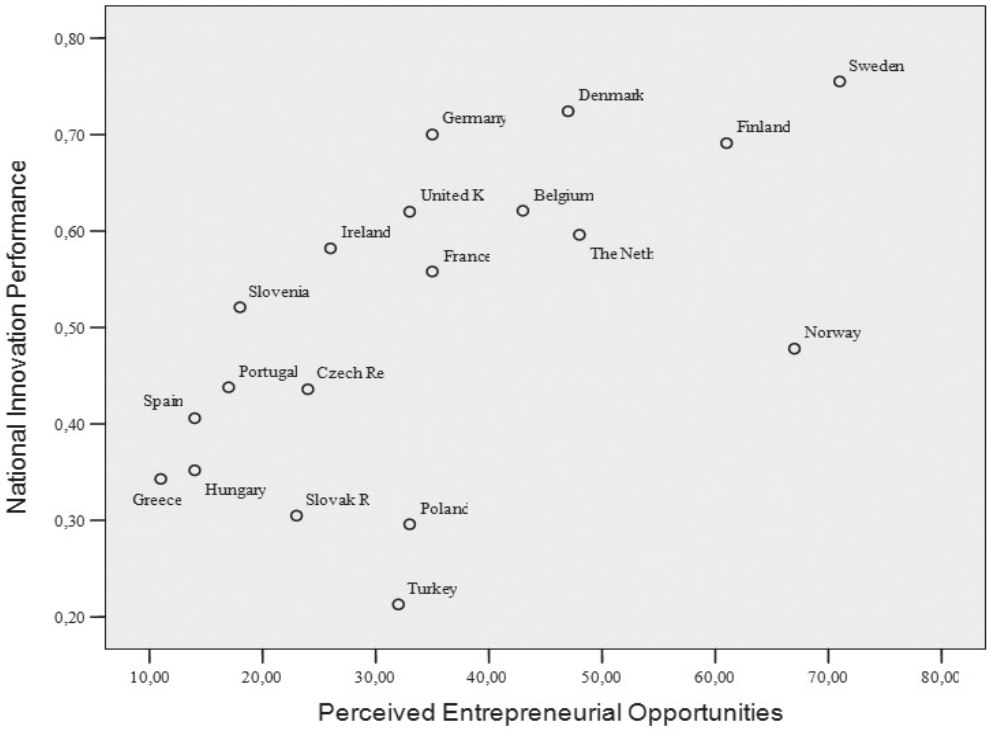

Figure 2: H_1 **Scatter Diagram**

In the second sub-hypothesis we proposed that there is not a significant correlation between "perceived capabilities of individuals" in a country and "national innovation performance" of that country. We used Spearman's Nonparametric Correlation test for the second sub-hypothesis and as a result $H_{2.0}$ was not supported. Results are shown in Table 3.

Table 3: H_2 **Correlations Table**

			National Innovation Performance	Perceived capabilities of individuals
Spearman's rho	National Innovation Performance	Correlation Coefficient	1,000	-,559(*)
		Sig. (2-tailed)	.	,013
		N	23	19
	Perceived capabilities of individuals	Correlation Coefficient	-,559(*)	1,000
		Sig. (2-tailed)	,013	.
		N	19	19

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

As a result we found significant negative correlation between "perceived capabilities of individuals" in a country and "national innovation performance" of that country. Scatter diagram of the cluster analysis is shown in Figure 3.

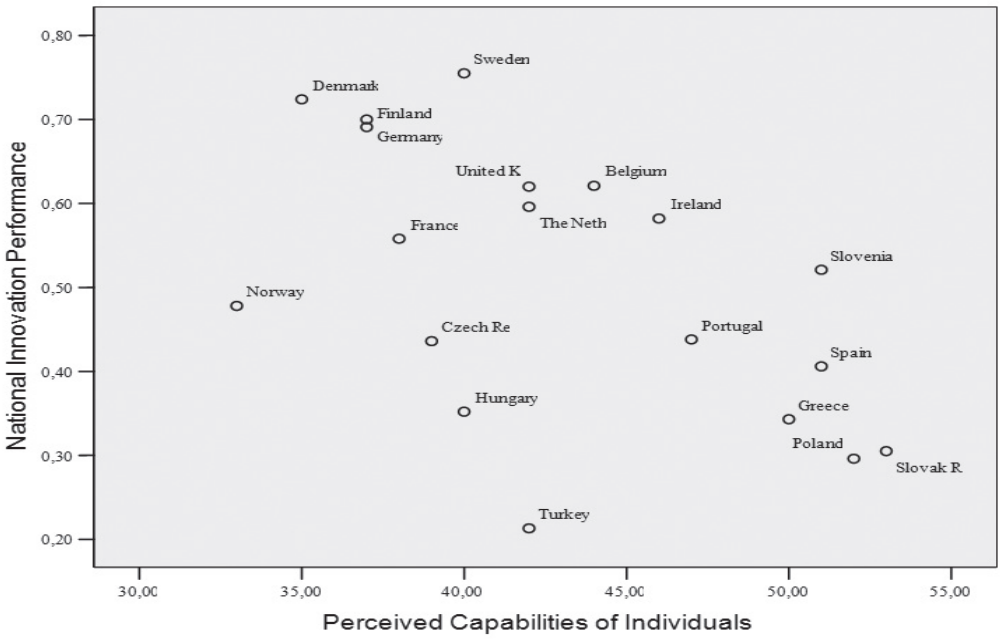

Figure 3: H_2 **Scatter Diagram**

In the third sub-hypothesis we proposed that there is not a significant correlation between "perceived fear of failure" in a country and "national innovation performance" of that country. We used Spearman's Nonparametric Correlation test for the third sub-hypothesis and as a result $H_{3.0}$ was supported. Results are shown in Table 4.

Table 4: H_3 **Correlations Table**

			National Innovation Performance	Fear of failure
Spearman's rho	National Innovation Performance	Correlation Coefficient	1,000	,163
		Sig. (2-tailed)	.	,504
		N	23	19
	Fear of failure	Correlation Coefficient	,163	1,000
		Sig. (2-tailed)	,504	.
		N	19	19

As a result we couldn't found a significant correlation between "perceived fear of failure" in a country and "national innovation performance" of that country. Scatter diagram of the cluster analysis is shown in Figure 4. The position of "Turkey" in this scatter diagram is remarkable.

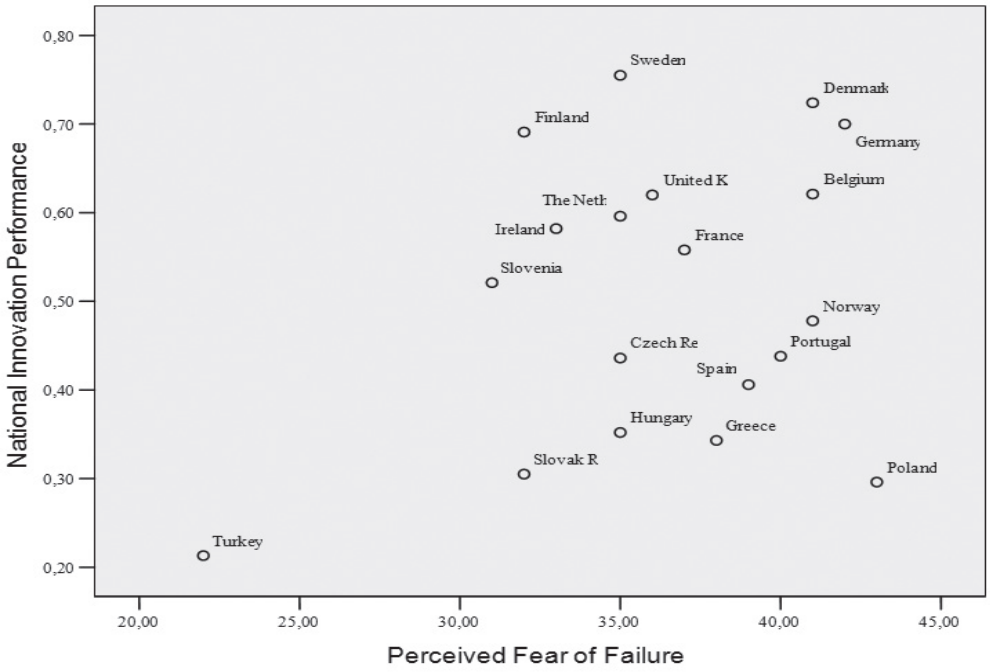

Figure 4: H_3 Scatter Diagram

In the last sub-hypothesis we proposed that there is not a significant correlation between "entrepreneurial intentions" in a country and "national innovation performance" of that country. We used Spearman's Nonparametric Correlation test for the third sub-hypothesis and as a result $H_{3.0}$ was not supported. Results are shown in Table 5.

Table 5: H_4 Correlations Table

			National Innovation Performance	Entrepreneurial intentions
Spearman's rho	National Innovation Performance	Correlation Coefficient	1,000	-,529(*)
		Sig. (2-tailed)	.	,020
		N	23	19
	Entrepreneurial intentions	Correlation Coefficient	-,529(*)	1,000
		Sig. (2-tailed)	,020	.
		N	19	19

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

As a result we found significant negative correlation between "entrepreneurial intentions" in a country and "national innovation performance" of that country. Scatter diagram of the cluster analysis is shown in Figure 5. The position of "Turkey" in this scatter diagram is remarkable.

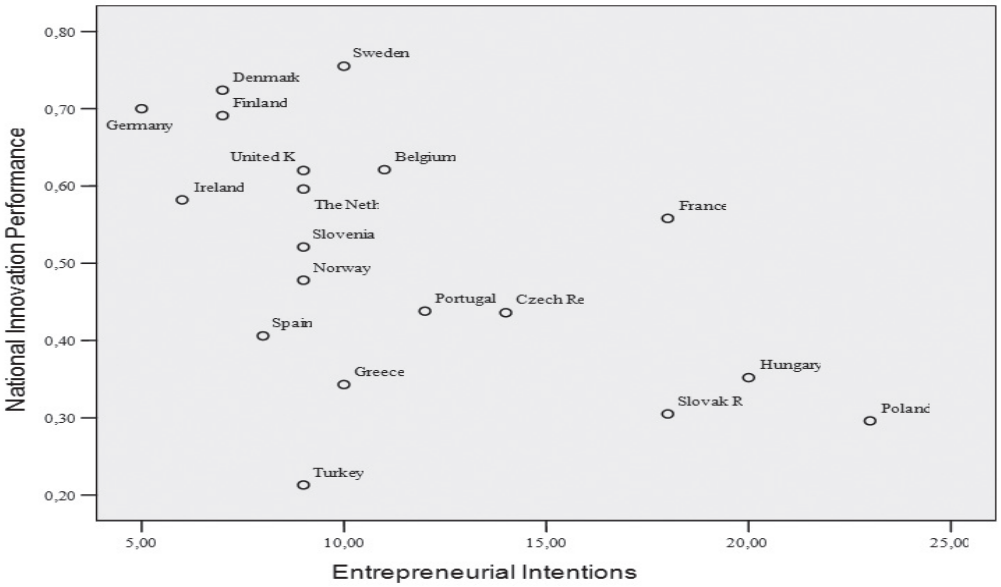

Figure 5: H_4 **Scatter Diagram**

In addition we made a Hierarchical Cluster Analysis using Ward Method in order to determine the position of Turkey within European Countries by "entrepreneurial perceptions". As a result we found five different clusters when we considered all four dimensions of entrepreneurial perceptions (the four main dimensions in GEM Global study). The cluster membership is shown in Table 6.

Table 6: Cluster Membership of all four dimensions of entrepreneurial perceptions (opportunities, capabilities, fear of failure, entrepreneurial intentions)

Case	Clusters
Belgium	1
Denmark	1
France	1
Germany	1
The Netherlands	1
United Kingdom	1

Czech Republic	2
Greece	2
Hungary	2
Ireland	2
Portugal	2
Slovak Republic	2
Slovenia	2
Spain	2
Finland	3
Norway	3
Sweden	3
Poland	4
Turkey	5

5. Conclusion

Of course there are many factors that correlate with the national innovation performances of European countries but as a conclusion; the dimensions of entrepreneurial perceptions partially related with national innovation performances. Especially, the significant positive correlation that we found between "perceived entrepreneurial opportunities" in a country and "national innovation performance" of that country is meaningful when we consider entrepreneurial opportunities as the percentage of individuals who believe there are opportunities to start a business in the area they live in.

Secondly, the significant negative correlation between "perceived capabilities of individuals" in a country and "national innovation performance" of that country may be contrary to expectations. But the logical reason of this finding is simple. In the countries that has higher national innovation performances, potential entrepreneurs may think that, it will be more complicated and there is a higher risk to start a new business in those competitive economies. On the other hand, in the other countries that have lower national innovation performances, potential entrepreneurs may have the courage to believe that they have the required skills, knowledge and experience to start a new business.

Thirdly, we couldn't find a significant correlation between "perceived fear of failure" in a country and "national innovation performance" of that country. But the position of "Turkey" in this comparison is highly remarkable. This interesting result may be an issue that should be taken into consideration for further researches.

Fourthly, we found significant negative correlation between "entrepreneurial intentions" in a country and "national innovation performance" of that country. Entrepreneurial intentions

defined by the percentage of individuals who expect to start a business within the next three years differ widely across the economies in each stage of economic development. So here, the logical reason of this finding is similar to the reason of second sub-hypothesis. In the countries that have higher national innovation performances, potential entrepreneurs may avoid to start a new business in those competitive economies. On the other hand, in the other countries that have lower national innovation performances, potential entrepreneurs may have the courage to start a new business. The similarity between second and fourth sub-hypothesis is logical.

In this study, we found that, the entrepreneurial perceptions in Turkey is significantly differs from other European countries. Not only Turkey differs from others in this manner. For example "Western European" countries like; Belgium, Denmark, France, Germany, Netherlands and United Kingdom are differing from other European countries and make a cluster among them. Similarly, "Southern European" countries like; Greece, Portugal, Slovenia and Spain are also included in the same cluster. Similarly, "Northern European" countries like; Finland, Norway and Sweden differ from other European countries and make a cluster among them. We think that, the differences between country clusters of all four dimensions of entrepreneurial perceptions will be an issue that should be taken into consideration for further researches.

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