Optimum Ekonomi ve Yönetim Bilimleri Dergisi, 2022, 9(2), 153-173
Optimum Journal of Economics and Management Sciences, 2022, 9(2), 153-173

The Effect of Attitude on Innovation Generation in Open Innovation Teams[1]

Sezer AYAZ[*], Belkıs ÖZKARA[**]

ABSTRACT

Open innovation has been studied in many different sample groups and cultures. However, relationship between open innovation attitude and open innovation generating capacity on open innovation teams is investigated for the first time in Turkey. The data were obtained through a questionnaire. Descriptive statistics, ANOVA, independent samples t-test, simple linear regression analysis and Pearson correlation analysis were used to analyze data. In consequence of analysis and tests, significant differences were found as to demographic characteristics of respondents belonging to different groups. In result of correlation analysis, no significant relationship was found between open innovation attitude and open innovation generation capacity at the p <.01 level. The regression analysis showed that there is no significant predictor at p <.05 level between open innovation attitude and open innovation generation capacity. The results can be used in businesses to create new innovation strategies and for academicians to new researches on this subject.

Keywords: Open innovation, attitude, innovation generation capacity

JEL Classification: M10, M19

Açık İnovasyon Takımlarında Tutumun İnovasyon Üretme Üzerindeki Etkisi

ÖZ

Açık inovasyon birçok farklı örneklem grubu ve kültürde incelenmiştir. Ancak, açık inovasyon ekiplerinde açık inovasyon tutumu ile açık inovasyon üretme kapasitesi arasındaki ilişki Türkiye'de ilk kez araştırılmıştır. Veriler anket yoluyla elde edilmiştir. Verilerin analizinde tanımlayıcı istatistikler, ANOVA, bağımsız örnekler t testi, basit doğrusal regresyon analizi ve Pearson korelasyon analizi kullanılmıştır. Analiz ve testler sonucunda, farklı gruplara ait katılımcıların demografik özelliklerine göre önemli farklılıklar bulunmuştur. Korelasyon analizi sonucunda açık inovasyon tutumu ile açık inovasyon üretme kapasitesi arasında p<.01 düzeyinde anlamlı bir ilişki bulunamamıştır. Regresyon analizi, açık inovasyon tutumu ile açık inovasyon üretme kapasitesi arasında p <.05 düzeyinde anlamlı bir yordayıcı olmadığını göstermiştir. Elde edilen sonuçlar işletmelerin yeni inovasyon stratejileri oluşturmalarında ve akademisyenlerin bu konuda yeni araştırmalar yapmalarında kullanılabilir.

Anahtar Kelimeler: Açık inovasyon, tutum, inovasyon üretme kapasitesi

JEL Sınıflandırması: M10, M19

Geliş Tarihi / Received: 09.02.2022 Kabul Tarihi / Accepted: 10.03.2022

[1] This paper was based on Sezer AYAZ's Phd thesis.

[*] Dr. Öğr. Üyesi, İstanbul Aydın Üniversitesi, İİBF, İşletme Bölümü, sezerayaz@aydin.edu.tr, ORCID:0000-0002-6374-8652

[**] Prof. Dr., Afyon Kocatepe Üniversitesi, İİBF, İşletme Bölümü, bozkara@aku.edu.tr, ORCID:0000-0002-4324-9741

1. INTRODUCTION

It is widely accepted in the literature that one of the main components of competitive advantage is innovation (Schumpeter, 1942; Penrose, 1959). Commercialization of innovations includes making existing products or services better quality, cheaper and more useful for consumers, improving existing production processes to produce faster, higher quality and lower cost output, applying new ways and methods of doing business and new marketing techniques. This multifaceted nature of innovation has led to the spread of innovations from the R&D branch to all employees of the structure and then to stakeholders outside the organization such as employees, customers, suppliers (Chesbrough and Appleyard, 2007). This last form of innovation is called "Open Innovation". Open innovation is broader and more participatory process.

Organizations that limit innovation to their internal resources are faced with many limitations (Vrande, Jong, Vanhaverbeke, & Rochemont, 2009) in terms of innovation capacity. Habits that have become entrenched, power struggles between individuals, groups and departments, conflicts due to inequities in the distribution of resources can lead to a decrease in the innovation capacity of the organization over time. On the other hand, while the intensification of competition, especially the fact that profitability depends on reducing costs in the production of standard products narrows the field of action of enterprises, the fact that competitive advantage becomes associated with producing more innovations increases the need to expand the sources of innovations. In such cases, closed innovation is not enough for businesses; businesses need external resources or outward resource flow, that is, open innovation.

Open innovation models (Chesbrough, 2003) become dissimilar from “closed innovation” conjectures at every stage, and mainly product development and budget systems are implemented within business-to-business relationship arrangements (Huang and Rice, 2009). In addition to the important studies of Chesbrough (2003), many scientists from other geographies have conducted studies explaining the differences of the open innovation paradigm from closed innovation and expressing the transition process to open innovation (Gassmann, 2006; Dodgson, Gann, & Salter, 2006; Lichtenthaler, 2006; West & Gallagher, 2006).

This article focuses on the important roles of innovation generation capacity and open innovation attitude in revealing the organizational climate suitable for open innovation in order to contribute to the effectiveness of open innovation practices. In addition, the research provides the chance to discuss the nature and results of the empirical data obtained, analyzes and explores the role of the results of these analyzes in creating an effective climate for open innovation.

2. CONCEPTUAL FRAMEWORK

2.1. Open Innovation

The open innovation phenomenon was initially presented by Chesbrough (2003), drawing attention to the improvement in the mobility of knowledge and experience in line with the mobility of the workforce, and the availability of venture capital for the commercialization of this knowledge.

Henry Chesbrough (2003) characterized Open innovation as the use of purposeful information input and output to revive internal innovation, creating markets for external use of innovation, respectively. In the open innovation paradigm, it is predicted that businesses can use ideas obtained from outside the business as well as ideas from their employees, and also can and should use internal and external avenues for the market because they care about improving their technology.

Companies that try to survive only with R&D studies with their own employees cannot cope with fierce global competition and high research and development (R&D) costs and have to implement open innovation. The innovation work of enterprises is mostly international. Therefore, they adopt "open innovation teams" that they have established or are involved in, in order to get ahead of their competitors in the market and to produce new products and services. These teams are open innovation teams that include external partners such as customers, suppliers or universities.

Open innovation is basically implemented in two ways. There are moderators in both types. The first type is the older and classical application that the enterprise calls for open innovation and collects ideas and tries to create innovation from these ideas. The second type is the more comprehensive form in which organizations or individuals with factors such as license, technology, technical workforce forms an open innovation team and are usually managed by an independent moderator (professional open innovation facilitator).

In addition to the important advantages of open innovation applications, it is possible to encounter some factors (trust, status quo, established organizational culture, organizational structure type, etc.) that make it difficult to implement. Since the organization emerges with the combination of many structures (production, marketing, finance, human resources, purchasing, etc.), it may be necessary to intervene separately for each of these structures within the organization in order to make the atmosphere suitable and to eliminate the factors (Sieg, Wallin, & Von Krogh, 2010) that make open innovation practice difficult. It is expected that the relevant structures will be given a form that is integrated and compatible with the open innovation process. The structures included in the integration have to be external factors as well as internal factors (stakeholder, external information source, purchased license, etc.) as a requirement of open innovation. Individuals or organizations want to be sure that their intellectual property will not be harmed. A project's chances of success are greatly increased if agreed at the outset of project about an intellectual property situation with a clear and equitable acquisition structure that satisfies all, reflecting the obligations and tenure of all partners. One of the most effective facilitators for the success of the process to create open innovation is that each stakeholder is aware of the goals of the other stakeholders (JISC, 2009). Such barriers can affect the innovation capacity of open innovation (Seltzer and Mahmoudi, 2013).

2.2. Attitude

People have an attitude and perspective on all important aspects of life. Arnold (1991) describes attitudes as feelings and thoughts that affect an individual's behavior towards someone or something in a certain way. According to the literature (Ajzen, 1991; Festinger, 1957; King and Janis, 1956; Stone and Cooper, 2003), attitude can be affected by many internal and external factors and result in different results. Working people cannot decide each attitude they show according to their own behavior types.

For-profit organizations have higher innovation tendencies and risk-taking rates than non-profit organizations (Hull and Lio, 2006). Within the scope of this research, the collective mind states of the members within a particular organization consist of their organizational open innovation attitudes. Individual innovation actors such as transferors, beneficiaries and intermediaries play a critical role in open innovation activities in intra-organizational and inter-organizational relations and in the open innovation ecosystem. Therefore, organizational open innovation attitudes can be measured through an individual set of open innovation attitudes. An organization's attitude towards open innovation is a preliminary stage or part of its capabilities (Jun and Kim, 2022).

H_0: The attitude towards open innovation does not significantly affect the capacity to produce innovation.

H_{01}: There is no positive and significant relationship between the attitude towards open innovation and the capacity to produce innovative products.

H_{02}: There is no positive and significant relationship between the attitude towards open innovation and the capacity to produce innovative processes.

2.3. Innovation Capacity in Open Innovation

Some innovations are called "strategic innovations" because they have a never-ending effect on the survival of the business. These innovations can be seen in the field of new technology such as Information Technology, or in retailing as a new market discovery. It can emerge as new raw materials or alloys extracted from the ground, as new oilfield resources, as new products or services such as credit cards or mobile phones, as new organizational forms such as flat organizations, or as marketing practices such as customer management relationships. Huge businesses have trouble completing a task, which is a disease that brings the end of most businesses, while new entrepreneurs actively continue to interact with their customers, which has become a necessity for the existence of their enterprises, leading to their growth through innovation (Joshi, 2010).

Innovation capacity is expressed as the results of the innovation process. Innovation capacity is the tendency of businesses to innovate in the form of products, processes and services. Studies in the field of business innovation emphasize that innovation capacity is not at the same level in every business, and it is affected by a wide and complex set of factors that encourage and constrain the business innovation process (Silva et al. 2014).

According to many authors (Mansfield, 1988; Shields and Young, 1994; Archibugi, Evangelista, and Simonetti, 1995; Camacho and Rodríguez, 2005; Canepa and Stoneman, 2008; Elche and González, 2008; and Moreira et al., 2012), businesses that invest more in research and development, building their structures and partnership skills gain more technological capacity and, as a result, have the capacity to generate more innovation. For this reason, these researchers debate that the innovation capacity of enterprises with more advanced technology, better organizational structures and qualified personnel is relatively higher.

Pavitt (1982) indicated that innovation-oriented businesses invest heavily in R&D. An organization can carry out R&D activities inside or outside (Berchicci, 2013). Saying that the development of new products and/or services is the traditional focus of R&D activities, Almus and Czarnitzki emphasize that it is not used much in other types of innovation such as marketing and organizational process. Freeman (1987), Chesbrough (2003) and Harris and Li (2009) suggested that external information sources are an important component of enterprises' innovation generation and even related to their performance.

Investments in new technologies, which may be in the form of new equipment, software or machinery, are other components that contribute to innovation (Santamaria, Jesus Nieto, & Miles, 2012). That is, innovation can take place in organization, processes and marketing as well as products and services (D'Este, Iammarino, Savona, & von Tunzelmann, 2012). In the literature on innovation, it is understood that enterprises with new technology increase their innovation capacities in both production and service sectors. (Evangelista, 2000; Heidenreich, 2009; Sirilli and Evangelista, 1998).

According to Millot (2009) and Moreira et al. (2012), the obtaining of other exterior knowledge, especially on subjects such as know-how, non-patented innovations and patent property rights, is a pointer that has a vigorous effect on innovation. Businesses with skilled

human resources and emphasis on education are more competent and tend to innovate more. Consistent with the foregoing, Romijn and Albaladejo (2002) state that institutions that can better absorb and reproduce new knowledge are businesses with a highly qualified workforce and advanced education degrees, and with these aspects they show a higher capacity to develop innovation.

For innovation to occur in an organization, knowledge must be developed in many ways (Thornhill, 2006). This knowledge, which may be available to existing workgroups in the workplace, can also be obtained from outside the organization. (Zhou & Li, 2012). Another of the main components that increase the innovation capacity of the company is shown as new information acquired from outside or developed internally. (Chadee & Raman, 2012; Escribano, Fosfuri, & Tribo, 2009).

H_1: There is a positive and significant relationship between the capacity to produce innovative products and the capacity to produce innovative processes in open innovation teams.

2.4. Open Innovation Teams

Porter (1998) defined teams as the geographic concentration (especially in areas that compete but also cooperate) of interconnected businesses, specialist suppliers, service providers, businesses in related industries, and related institutions. Gathering of companies, often small and medium-sized enterprises (SMEs), give opportunity for 'joint effectiveness', where competitive advantages emerge through preferable association of integral professions (Pouder and St. John, 1996). There are many studies and researchers talking about the positive effects of such models on innovation (Best, 2001).

Marshall (1920) put forward the idea of teamwork, which expresses the maximization of resources, and this idea develops on economic models of cooperation. In literature, team's meaning is concerned with emphasizing both geographical concentrations of businesses both information communion events that certain pathbreaking events happen and geographical condensations of firms (Asheim et al. 2006; Delgado et al., 2010; Lindqvist, 2009), as well as enterprises which give shape collective events amongst, whether they center upon economic processings or not (Gordon & McCann, 2005; Bessant et al., 2012). Inherently, the emerging paradigm of "open innovation" emphasized the need to focus on being an innovative team. (Chesbrough, 2003). It is widely recognized that pooling knowledge, sharing risks and experimenting can make it possible for businesses that form team to innovate and learn jointly.

Obtaining knowledge by network is a driving potency that draws businesses to be teams (Morris, Bessant, & Barnes, 2006); efforts to establish "learning networks" are increasing to make possible influences like this (Cooke, 2007). "Collective learning activity" is a new emerging feature of these networks; these dynamic interactions, which are put forward to reach higher innovation capacities, are a systematic movement that can only be possible with pre-designed activities and is unlikely to be implemented by imitation. (Rush, Hobday, & Bessant, 1996).

With increasing openness, the character of the innovation phenomenon has changed, resulting in a number of new features. These new features of open innovation, also expressed as open co-innovation (Bessant and Möslein, 2012) have reduced barriers and makes innovation a multiplayer game by improving teams around innovation primary topics through enhanced participation, broadening the substructure for new sources of ideas from outside experts in design to user participation, forming more basic innovation teams, speeding the spread of ideas up, and reaching small markets with immensely diversified hopes.

These teams are collaborative groups that make connections between time, space and cultural barriers by using computer-mediated communication technologies to reach a common goal or solve a common problem (Jarvenpaa et al. 1998; Lipnack and Stamps, 1997). Teams that share more collective experiences/common ground are more likely to create more cohesive mental team models (Klein, 2000).

There are many virtual teams in the world, consisting of government agencies or representatives of large, medium and small businesses and individuals working independently, who adopt the open innovation team model and become team members and stakeholders in open innovation outputs. The organizations that bring these teams together generally operate on similar principles. Open innovation-themed camps are organized in many countries of the world, especially in America and Europe, which lead to the establishment of open innovation teams.

Open innovation is basically implemented in two ways. There are moderators in both types. The first type is the older and classical application that the enterprise calls for open innovation and collects ideas and tries to create innovation from these ideas. The second type is the more comprehensive form in which organizations or individuals with factors such as license, technology, technical workforce form an open innovation team and are usually managed by an independent moderator (professional open innovation facilitator).

In addition to the important advantages of open innovation applications, it is possible to encounter some factors (trust, status quo, established organizational culture, organizational structure type, etc.) that make it difficult to implement. Since the organization emerges with the combination of many structures (production, marketing, finance, human resources, purchasing, etc.), it may be necessary to intervene separately for each of these structures within the organization in order to make the atmosphere suitable and to eliminate the factors (Sieg, Wallin, & Von Krogh, 2010) that make open innovation practice difficult. It is expected that the relevant structures will be given a form that is integrated and compatible with the open innovation process. The structures included in the integration have to be external factors as well as internal factors (stakeholder, external information source, purchased license, etc.) as a requirement of open innovation. Individuals or organizations want to be sure that their intellectual property will not be harmed. A project's chances of success are greatly increased if agreed at the outset of project about an intellectual property situation with a clear and equitable acquisition structure that satisfies all, reflecting the obligations and tenure of all partners. One of the most effective facilitators for the success of the process to create open innovation is that each stakeholder is aware of the goals of the other stakeholders (JISC, 2009). Such barriers can affect the innovation capacity of open innovation (Seltzer and Mahmoudi, 2013).

3. METHODOLOGY

This research is a quantitative study designed with the relational survey model. Relational screening models aim to determine the presence and level of variation between more than one variable (Karasar, 2004). It is very clear that disciplines that are not known or do not reach a sufficient level need supportive and improving academic studies. The concept of open innovation, which is emphasized, is a paradigm that is not well known in Turkey, although it is now considered a key to global competition, as Pera (2009) states. There are not enough studies on how the attitudes of the partners (moderator, business owners, employees or independent individuals) in open innovation teams affect the capacity to produce innovation. The importance of this research emerges here. The main purpose of this research is to make some evaluations in order to increase the awareness and usage of the open innovation field in Turkey as a result of the findings, and to create safe and value-creating open innovation methods that can be used by businesses and individuals who implement or plan to implement the open innovation process

with the open innovation team model. Through the model used in the research, the relationship between the "attitude" dimension of the Open Innovation scale developed by Ovacı (2015) and the "product production capacity" and "process producing capacity" of the Innovation Capacity scale developed by Prajogo and Ahmed (2006) is being measured. Primary objective of the research is to analyze whether there is a relationship between open innovation attitude and innovation production capacity in the sample of open innovation teams in Turkey. The sub-purpose is to reveal whether the relevant dimensions differ in terms of the demographic characteristics of the participants.

3.1. Population and Sample

It is very important to establish a goal in empirical studies and to choose the most appropriate sample to achieve this goal, in terms of giving healthy results within the framework of the research and the sample being representative of the general population. The whole of the units showing common characteristics, in which the study outputs are generally accepted, can be accepted as the universe (Ural & Kılıç, 2005). The universe of the research consists of representatives of large, medium-sized or small businesses and individuals working independently, who adopt the model of open innovation teams and are team members in Turkey and stakeholders in open innovation outputs.

Since there is no other example in Turkey yet, the open innovation camp named HacknBreak, which is organized once a year by the open innovation association and plays the role of facilitator for open innovation teams with both physical conditions and educational support, was chosen as a sample.

A total of 600 questionnaires, which we determined as data collection tools, were sent to the team members participating in the open innovation camp. 369 of these questionnaires received feedback. The response rate of our data collection tools is 61.5%. After eliminating the questionnaires that were found to be incomplete or incorrect, the number of questionnaires included in the evaluation was 281. Easy sampling method was preferred in this research. It is the generally accepted approach by researchers that the number of samples should be at least 5 times the number of items used in the scale (Tavşancıl, 2006; Büyüköztürk, Kılıç Çakmak, Karadeniz, & Demirel, 2014). Since the number of samples reached is twenty times the size of the 14 items in the scale, it can be said that a good number has been reached for statistical operations. In Table 1, the percentages and frequencies provide information about the demographic characteristics of the sample.

Tablo 1: Demographic Features

		Frequency (N)	Percent (%)
Age	16-24	199	71.1
	25-34	53	18.9
	35 and above	28	10.0
Gender	Female	95	33.9
	Male	185	66.1
Educational Status	High school and below	30	10.7
	Associate Degree	15	5.3
	Bachelor	208	74.0
	Graduate	28	10.0
Working Sector	Public	14	5
	Private sector	164	58.6
	Non-governmental organization	31	11.1
	Half Public Half Private	15	5.4
	Student	56	20
Experience in the Industry	0-3	197	70.1
	4 and above	84	29.9
Position in Business	Project coordinator, volunteer, implementer, engineering and software	153	54.6
	Founder, partner and administrative affairs	71	25.4
	Student	56	20
How Many Years in Open Innovation Practices	0-2	247	87.9
	3 and above	34	12.1
How Many Open Innovation Applications	0-2	239	85.1
	3 and above	42	14.9

3.2. Data Collection Tool

In the research, quantitative research technique was used by applying a questionnaire. In order to collect data in the research, there are 8 closed-ended questions (age, gender, education level, industry, industry experience, position, how many years open innovation practices have been experienced and how many open innovation practices individual has been involved) regarding demographic characteristics. In addition to questions about demographic characteristics, a dimension from the Open Innovation Scale developed by Ovacı (2015), which is considered to be theoretically appropriate within the framework of experts, and the Innovation Capacity Scale developed by Prajogo and Ahmed (2006) were used.

The scale consists of a total of 14 items and 3 dimensions. The sentences in both scales are rated with a 5-point Likert (5: Strongly Agree, 4: Agree, 3: Undecided, 2: Disagree, 1: Strongly Disagree).

3.3. Analysis of Data

Data were collected through a questionnaire form. Descriptive statistics method was used to analyze the data. In addition to calculating the frequency (f) and percentage (%) values of the answers given by the participants in response to the research statements, independent sample t-test, one-way analysis of variance (ANOVA), Pearson correlation analysis and simple linear regression analysis were conducted. In order for the data to be easily understood and interpreted, the findings are presented in tables with sufficient detail.

4. RESULTS

In the analysis of the data obtained with the measurement tool of the research, descriptive statistical methods (mean, percentage, standard deviation, frequency) were used to obtain demographic data. In order to determine the normality distribution, the kurtosis and skewness coefficients were obtained with the statistical analysis method, which is frequently used in social sciences. It is advocated that the absolute skewness values of the acceptable limit values for the kurtosis and skewness values indicating the normal distribution of the items in the measurement tool should not exceed 3.0, and the absolute kurtosis values should not exceed 10.0 (Kline, 2011). It has been observed that all skewness and kurtosis coefficients are between +1 and -1 (Hair, Black, Babin, Anderson, & Tatham, 2013) and therefore are normally distributed.

As seen in Table 3, as a result of the calculation of the Cronbach's Alpha internal consistency coefficient, which was calculated to test the internal consistency reliability of the measurement tool, it was seen that the relevant 3 factors were above the reliability value of >.60, which is accepted in social sciences. Values of .60 and above are acceptable reliability value ranges for research applied in social sciences (Nunnally, 1967).

Table 2: Internal Consistency and Normality Distribution Results

	Attitude	Capacity to produce innovative products	Capacity to produce innovative processes	All Scale
α	.902	.847	.883	.842
Skewness	-1.054	.062	-.004	
Kurtosis	.587	.037	-.609	

In order to examine the differences in the scale items according to the demographic characteristics of the participants, the t-test for independent samples and the one-factor ANOVA statistical method were used (Büyüköztürk, 2012). Pearson correlation analysis was used to measure the bilateral relationship between variables.

Table 3: Independent Samples T-Test for Comparing Participants by Gender on the Factor Levels in the Measurement Tool

	Group	N	Mean	Standard Deviation	t	Df	p*
Attitude	Female	95	4.5137	.58539	1.234	279	.218
	Male	186	4.4161	.64729			
Capacity to produce innovative products	Female	95	3.2526	.73699	-2.577	279	.010
	Male	186	3.4925	.73848			
Capacity to produce innovative processes	Female	95	3.3395	.95366	-2.066	279	.040
	Male	186	3.5659	.82242			

*p<0.05

A significant difference was found between the male and female participants in the research in two of the three factors, capacity to produce innovative products (p=.010) and capacity to produce innovative processes (p=.040), and no significant difference was found in attitude factor according to gender. Table 4 shows the relevant values for significant differences. Accordingly, male participants' ($\bar{X}$=3.4925) capacity levels to produce innovative products are significantly higher than female participants ($\bar{X}$=3.2526). Male participants ($\bar{X}$=3.5659) have a significantly higher capacity to produce innovative processes than female participants ($\bar{X}$=3.3395).

Table 4: Independent Samples T-Test for Comparing Participants According to Industry Experiences on Factor Levels in the Measurement Tool

	Group	N	Mean	Standard Deviation	t	df	p*
Attitude	0-3	197	4.4284	.62303	-.845	279	.399
	4 and above	84	4.4976	.63965			
Capacity to produce innovative products	0-3	197	3.4772	.75142	2.282	279	.023
	4 and above	84	3.2571	.71174			
Capacity to produce innovative processes	0-3	197	3.5609	.89041	2.116	279	.035
	4 and above	84	3.3214	.81456			

*p<0.05

Among the individuals participating in the research, a significant difference was found in the factors of capacity to produce innovative product (p=.023) and capacity to produce innovative processes (p=.035), which are two of the three factors according to their industry experience, and no significant difference was found in the attitude factor according to their industry experience. Table 5 shows the relevant values of significant differences. According to the test results, the capacity levels to produce innovative product of the participants with 0-3 years of industry experience ($\bar{X}$=3.4772) are significantly higher than the participants with 4 years and more experience ($\bar{X}$=3.2571). Participants with 0-3 years of industry experience ($\bar{X}$=3.5609) have a significantly higher capacity to produce innovative processes than participants with 4 years and more experience ($\bar{X}$=3.3214).

Table 5: Independent Samples T-Test for Comparing Participants According to How Many Years They Have Been Innovating on Factor Levels in the Measurement Tool

	Group	N	Mean	Standard Deviation	t	df	p*
Attitude	0-2	247	4.4316	.61272	-1.263	279	.208
	3 and above	34	4.5765	.72491			
Capacity to produce innovative products	0-2	247	3.4121	.77398	.046	279	.950
	3 and above	34	3.4059	.49845			
Capacity to produce innovative processes	0-2	247	3.4919	.89711	.133	279	.894
	3 and above	34	3.4706	.69294			

*p<0.05

No significant difference was found in any of the three factors according to how many years they had been doing open innovation among the participants in the research.

Table 6: Independent Samples T-Test for Comparing Participants According to How Many Open Innovations They Have Produced on Factor Levels in the Measurement Tool

	Group	N	Mean	Standard Deviation	t	df	p*
Attitude	0-2	239	4.4000	.64639	-3.179	279	.000
	3 and above	42	4.7286	.41396			
Capacity to produce innovative products	0-2	239	3.4251	.77245	.735	279	.366
	3 and above	42	3.3333	.56855			
Capacity to produce innovative processes	0-2	239	3.4948	.90588	.249	279	.760
	3 and above	42	3.4583	.67154			

*p<0.05

A significant difference was found among the participants in the attitude (p=.000) factor according to how many open innovations they had made, but no significant difference was found in the other two factors. Significant difference values are shown in Table 7. Accordingly, the open innovation attitude levels of the participants who produced 3 or more innovations ($\bar{X}$=4.7286) were significantly higher than the participants who produced innovations between 0-2 ($\bar{X}$=4.4000).

Table 7: Anova Test for Comparing Participants by Age Groups on Factor Levels in the Measurement Tool

Factor		Sum of Squares	Df	Mean Squares	F	Sig
Attitude	Between Groups	.161	2	.081	.203	.816
	Within Groups	110.161	278	.396		
	Total	110.322	280			
Capacity to produce innovative products	Between Groups	5.695	2	2.847	5.282	.006
	Within Groups	149.869	278	.539		
	Total	155.564	280			
Capacity to produce innovative processes	Between Groups	12.725	2	6.362	8.795	.000
	Within Groups	201.118	278	.723		
	Total	213.843	280			

*p<0.05

Among the individuals participating in the research, a significant difference was found in the factors of capacity to produce innovative products (p=.006) and capacity to produce innovative processes (p=.000), which are two of the three factors according to age groups, and no significant difference was found in the attitude factor according to age groups. Significant difference coefficients are shown in Table 8. According to the results of the Games-Howell Post Hoc test, which is conducted to determine the difference between age groups and is applied in cases where the variance between groups is not homogeneous, it was found that the level of capacity to produce innovative products of the participants aged 16-24 ($\bar{X}$=3.4940) was significantly higher than the participants in the 35 and over age group ($\bar{X}$= 3.3571). According to the Scheffe test result, which is one of the Post Hoc tests applied in cases where the variance between groups is homogeneous, it was determined that the level of capacity to produce innovative products of the participants aged 16-24 ($\bar{X}$=3.6163) was significantly higher than the participants aged 25-34 ($\bar{X}$=3.0755).

Table 8: Anova Test for Comparing Participants According to Educational Status on Factor Levels in the Measurement Tool

Factor		Sum of Squares	Df	Mean Squares	F	Sig
Attitude	Between Groups	3.626	3	1.209	3.138	.026
	Within Groups	106.696	277	.385		
	Total	110.322	280			
Capacity to produce innovative products	Between Groups	3.469	3	1.156	2.106	.100
	Within Groups	152.094	277	.549		
	Total	155.564	280			
Capacity to produce innovative processes	Between Groups	6.892	3	2.297	3.075	.028
	Within Groups	206.951	277	.747		
	Total	213.843	280			

*p<0.05

Among the individuals participating in the research, a significant difference was found in the factors of open innovation attitude (p=.026) and capacity to produce innovative processes (p=.028), which are two of the three factors according to their educational status, and no significant difference was found in the capacity to produce innovative products factor according to their educational status. Significant difference coefficients are shown in Table 9. According to the results of the Games-Howell Post Hoc test, which is conducted to determine the difference between education groups and applied in cases where the variance between groups is not homogeneous, the attitude level of the graduate students (X =4.7214) was significantly higher than the bachelor participants ($\bar{X}$=4.4404). It was determined that the level of capacity to produce innovative process of the participants whose education is high school and below ($\bar{X}$=3.8167) was significantly higher than the participants who had graduate education ($\bar{X}$=3.1339).

Table 9: Anova Test for Comparing Participants According to Industry on the Factor Levels in the Measurement Tool

Factor		Sum of Squares	Df	Mean Squares	F	Sig
Attitude	Between Groups	4.729	4	1.182	1.560	.185
	Within Groups	209.114	276	.758		
	Total	213.843	280			
Capacity to produce innovative products	Between Groups	1.901	4	.475	1.210	.307
	Within Groups	108.421	276	.393		
	Total	110.322	280			
Capacity to produce innovative processes	Between Groups	1.963	4	.491	.882	.475
	Within Groups	153.601	276	.557		
	Total	155.564	280			

*p<0.05

No significant difference was found among the participants in the research in any of the three factors according to the sector in terms of factor levels.

Table 10: Anova Test for Comparing Participants According to Their Position in the Business on the Factor Levels in the Measurement Tool

Factor		Sum of Squares	Df	Mean Squares	F	Sig
Attitude	Between Groups	2.362	2	1.181	3.042	.049
	Within Groups	107.960	278	.388		
	Total	110.322	280			
Capacity to produce innovative products	Between Groups	4.561	2	2.280	4.198	.016
	Within Groups	151.003	278	.543		
	Total	155.564	280			
Capacity to produce innovative processes	Between Groups	4.532	2	2.266	3.010	.051
	Within Groups	209.311	278	.753		
	Total	213.843	280			

*p<0.05

According to the positions of the individuals participating in the research, a significant difference was found in the factors of open innovation attitude (p=.049) and capacity to produce innovative products (p=.016), which are two of the three factors, in the factor of capacity to produce innovative processes, there was no significant difference according to their positions in the business. Significant difference coefficients are shown in Table 11. According to the results of the Tukey test, which is one of the Post Hoc tests applied where the variance between groups is homogeneous and to determine the difference between positions, the level of open innovation attitude of the participants in the founder, partner and administrative positions ($\bar{X}$=4.5803) is significantly higher than the student participants ($\bar{X}$=4.3071). However, it was determined that the level of capacity to produce innovative products of the student participants ($\bar{X}$=3.6179) was significantly higher than the participants in the founder, partner and administrative positions ($\bar{X}$=3.2366).

Table 11: Correlation Coefficients, Mean and Standard Deviation Values of the Dimensions of the Scale

Pearson Correlation	Attitude	Capacity to produce innovative products	Capacity to produce innovative processes
Attitude	1	-.108	-.077
Capacity to produce innovative products	-.108	1	.778**
Capacity to produce innovative processes	-.077	.778**	1
Mean	4.4491	3.4114	3.4893
Standard Deviation	.62770	.74538	.87391

**p<0.01

Correlation analysis was applied in order to observe the relationships between the main variables. As can be seen from the simple correlation values in Table 12, it is seen that there is no significant relationship at the p<.01 level between open innovation attitude and capacity to

produce innovative product, and between open innovation attitude and capacity to produce innovative process. As can be seen from the same table, there is a very strong positive correlation at the p<.01 level between the capacity to produce innovative products and the capacity to produce innovative processes.

Table 12: Simple Linear Regression Analysis on the Prediction of Participants' Open Innovation Attitudes on Their Capacity to Generate Innovation

Variable	B	Standardized β	Std. Error	F	R	R2	p*
Open Innovation Attitude	-.118	-.097	.072	2.642	0.097	.009	.105

*p< 0.05

As a result of the simple linear regression analysis performed to reveal how the open innovation attitude levels of open innovation team members predict their capacity to produce innovation, no significant relationship was observed between open innovation attitude levels of open innovation team members and their capacity to produce innovation (R = 0.097, R2 = 0.009) and their open innovation attitude levels were not found to be a significant predictor of their attitudes towards capacity to produce innovation (F(1-253)=2.642, p>0.05). Open innovation attitude levels of open innovation team members explain 1% of their capacity to produce innovation. The significance test of the coefficient of the predictor variable (B = -.118) based on the regression equation also shows that the level of open innovation attitude is not a significant predictor (p > 0.05).

According to the relevant findings;

H_0: Attitude towards open innovation does not significantly affect the capacity to produce innovation: ACCEPT

H_{01}: There is no positive and significant relationship between the attitude towards open innovation and the capacity to produce innovative products: ACCEPT

H_{02}: There is no positive and significant relationship between the attitude towards open innovation and the capacity to produce innovative processes: ACCEPT

H_1: There is a positive and significant relationship between the capacity to produce innovative products and the capacity to produce innovative processes in open innovation teams: ACCEPT

4. CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This research was applied to determine the effect of open innovation attitude on capacity to product open innovation in open innovation teams. In this direction, the literature on open innovation, open innovation teams, attitude and capacity to produce innovation in open innovation has been studied in detail. Although there are few researches regarding open innovation in national literature, there is no study on the open innovation team model and any factors affecting this model. In this sense, the research has been handled with both extensive literature and application scope and detailed statistical findings. In addition, the open innovation teams model in our country is defined for the first time in this research.

The open innovation teams model mentioned in the research has a very different operation in practice than other open innovation models. All stages, from the creation of an idea

to the economic value of that idea, develop in a different way from other open innovation models. This model, like other open innovation models, requires interaction with stakeholders, but its principles are completely different, like its operation. The vast majority of businesses that implement open innovation in Turkey (sometimes including those who join open innovation teams) adopt the classical open innovation model, which is generally web-based managed by themselves and generally does not reach the physical interaction with stakeholders until it approaches the conclusion stage. In the open innovation teams model, the first interaction with the stakeholders generally includes physical proximity, with exceptions. A physically closely delivered message affects a larger portion of individual's optical space, ultimately reducing the disorientating effects of external situational stimuli on the attention paid by receivers to the communication theme (Nisbett & Ross, 1980; Taylor & Fiske, 1978). In this case, since the stakeholders can feel each other's gestures, mimics and all other forms of expression with all their senses, a much stronger coordination can occur, or conflicts can be detected from the beginning and necessary interventions can be applied. Images' saturation that people create in reply to messages may be due partly to their somatic closeness to it. This influence may appear intuitively evident. Many researches have taken into account the effect of somatic distance of a stimulus on judgments (Chae, Li, & Zhu, 2013; Coulter & Norberg, 2009; Thomas & Tsai, 2012). In the fallowing stages of the process, telecommunication may also be mentioned, but the physical proximity at the beginning of the process would already made a positive impact on the process and has successfully performed the role of facilitator.

While an innovation is being created in the market, the fact that the interaction of the businesses among themselves and with independent individuals is emerging more and more, has led to the need to search the behaviors in detail. The factors affecting the behaviors of the stakeholders in the co-creating process have been tried to be searched in detail. Open innovation attitude is one of these factors.

It is thought that the findings provided in the research explain the effect of open innovation attitude on capacity to product innovation of open innovation team members, as well as important information about this universe by determining the demographic characteristics of open innovation team members.

According to the demographic characteristics of the open innovation team members in the research, it was observed that male participants were more than female participants. This can be considered as an indication that men are ahead of women in transforming their innovative ideas into entrepreneurship and that women should be encouraged to be more entrepreneurial in innovation. It has been observed that individuals between the ages of 16-24 have a tight rein on other age groups. The low number of participants over the age of 24 can be considered as an expression of the relatively low level of awareness and interest of these age groups towards open innovation teams. It is necessary to increase the awareness of bachelor’s degree and individuals with graduate education, whose number is remarkable in the research, about open innovation forms and processes and to attract their attention to open innovation teams. For this purpose, it may be beneficial to add theoretical information containing the relevant subject to the course content, especially in innovation and entrepreneurship courses at the master's and doctorate levels. By this means, self-developed human resources with more resources and abilities in open innovation will be obtained and individuals' attitudes towards the subject will be positively affected (Wicker, 1969). It was determined that the team members participating in the research came from many different professions. This situation leads to the formation of different ideas, which is one of the main facilitators in the open innovation process. The finding that the majority of the individuals participating in the research work in the private sector can show us that the private sector has a greater desire to compete and survive. The fact that the participants with less industry experience are more interested in open innovation and the open innovation team model compared to other experience groups can be associated with the motivation to start

their working life advantageously with the network and original innovations. The fact that the majority of those who produce innovation are not founder partners, owners or senior managers may show that they trust the idea owners and those with technical or intellectual knowledge in the innovation formation process. In addition, the fact that the majority of the participants have less than 3 years of open innovation experience and that the open innovation implementation they have experienced is less than three can be associated with the low awareness of the subject and the very young age group. If a general evaluation is made, it can be stated that awareness of open innovation and open innovation teams does not have a homogeneous structure in the society.

It has been determined that team members have high open innovation attitudes. However, no significant effect of attitude was observed in the process of producing open innovation. This situation can be accepted as an indicator of the existence of many different variables that affect attitude. The most influential article on the attitude-behavior problem was probably the extensive literature review by Ajzen & Fishbein (1977). According to this review, the result that attitudes are significant predictors of behavior can only be in question when the criteria of attitude and behavior are highly compatible. It is said that attitude and behavior measures are compatible with each other when they are matched with action, goal, context and time dimensions. Although general attitudes may be related to certain behaviors in some cases, the attitude-behavior correlation; It is now clear that attitudes and behaviors can be improved by measuring them at their corresponding levels of certainty. Besides the grade of precision with which attitudes and behaviors are measured, other different measurement factors can enhance attitude-behavior relation. For instance, Schwartz (1978) and Davidson & Jaccard (1979) found a very high correlation between attitude and behavior in their research. The larger the time interval separating the two measures, the more likely it is that attitudes have changed over time, and the less useful the initial (old) attitude measures as a predictor. Gabrenya and Arkin (1979) found that attitudes were better predictors of behavior when measurements were made under conditions of high commitment.

The innovation production process experienced by open innovation teams is an operation in which innovative and creative people establish a communication network with each other and share and develop ideas, intellectual and technical information within the framework of this network. The open innovation team identity is a close connection between its members. This can be considered as a well-functioning phase of an extensible system. For businesses that adopt the open innovation strategy, it acts as a communication and interaction model that brings each stakeholder closer to the others among the stakeholders that produce innovation. In particular, the valuable relationships established by the team members who started the process together physically offer them the opportunity to meet each other's surroundings. This can be used as new opportunity partners or ways to avoid threats in the later stages of the process. Likewise, the importance of the social network today is undeniably high. What matters is neither the market nor the hierarchy, but the network (Powell, 1991). Open innovation team members can exchange ideas and information with each other at any stage during the innovation creation process and make evaluations about the process and create the destiny of innovation together. In addition, the appreciation of the idea presented by an individual during this co-creation by other stakeholders in the team can be a very serious a shot in the arm for that individual. Each team member is likely to be on the same team with people who may be of great importance to their career. In this sense, it is inevitable for these individuals, who have the opportunity to present their intellectual and technical knowledge and ideas, to access career opportunities. In our country, the reciprocity norm in open innovation practices is not fulfilled in a reasonable way. Therefore, the open innovation team model can be an important innovation strategy in making open innovation attractive, as it offers a significant network and thus career opportunity. This

model should be widespread and especially planned by large-scale businesses rather than the implementation of only one institution.

In the open innovation process, stakeholders do not hesitate to share every idea they produce. Likewise, in this process, there are no nonsense ideas, at worst, there are ideas that can be developed. All team stakeholders act with this mentality. Each of them already knows that if a great idea could come up on its own, they wouldn't need to form a team.

It can be said that open innovation practices are very new for our country. With the globalization of markets, it can be seen from both academic researches and business world discussions and practices that an understanding has been developed towards the local acceptance of universal economic phenomena. In today's world, where relevant research and discussions are frequently made, the conditions of competition have become much tougher than before. We often see businesses with a long history of experience, sadly going through a rapid collapse and ending their economic life. On the contrary, we can see that companies open to innovation continue to rise rapidly and even individuals who come to the forefront with their innovative aspect and take the lead in very large enterprises. Businesses that see innovation as vitally important and create their business model accordingly should realize that these innovations should be faster, less costly and of higher quality, beyond just the need to innovate. The open innovation model is considered the most suitable for this purpose. Among the open innovation models, it is thought that the most suitable model for overcoming the obstacles to open innovation is the open innovation teams model. In this model, many advantages of physical proximity can be used both for climbing the steps of success in business life and for economic and social gain. It is thought that this research is important in order to be a guiding resource for businesses and individuals who want to increase awareness and implement both open innovation and open innovation teams model in detail.

In order to develop the implementation area of open innovation and open innovation teams model, only the researches of academicians to raise awareness will not be enough. In addition, businesses or individuals who try to produce innovation and initiate the process (generally calling for open innovation) should take care to be closely acquainted with their stakeholders at every stage of the process. In this process, which it has attempted to create together with these stakeholders for the sake of a common purpose, it is important to fulfill duties such as establish and maintain the trust of each stakeholder, to keep their motivation alive, to take a position by paying regard to the norm of reciprocity, to create fair policies, to ensure transparency within the team, to ensure that ideas do not go out of the team, to maintain and improve the environment suitable for open innovation by constantly monitoring the atmosphere, being fair in economic, psychological and social acquisitions are the most basic practitioner characteristics for an innovation manager. In addition, broad-framed, easy-to-understand and legally binding contracts that protect all stakeholders should be created. It is thought that the biggest problem that delays the development of open innovation in our country is that the managers who are already trying to implement innovation are unaware of or do not care enough about these process requirements mentioned in academic researches. Therefore, the use of academic studies by open innovation managers can play a key role in the outcome of the process.

As seen in the research, it has been observed that open innovation implementations are insufficient to attract the attention of talented minds with graduate education, since the current innovation managers cannot fully meet the above process requirements. In this sense, the logical determination of sociopsychological and economic gains for graduate education level may attract the attention of this education group and thus the quality of open innovation teams may increase. In addition, state or private sector incentives for innovation should also be considered not only for the young age group, but also for individuals with graduate education, whose age is likely to be advanced. The value that individuals belonging to this education group will add to the open

innovation process can be at very high levels. Individuals participating in open innovation teams, if they are working under an institution / organization, should be given time and space by the business they work for, so that they can only deal with that innovation process. In this way, the motivation and attention of the individual will increase, and he will be able to make serious contributions to both himself and the open innovation process.

In addition to the resources transferred to the open innovation process by the businesses, the business representative participating in the process should also increase their intellectual and technical knowledge by participating in all activities such as training, congress, symposium and acquiring relevant learning materials. It would be right for her/his company to plan and finance this. As it is understood from the findings of the research, although businesses are very generous in spending on physical and technological infrastructure to produce innovation, they prefer to be extremely thrifty during the process. While resource planning is being done, the expenses during the process should be as well planned as the initial expenses. Thus, the process will take place in a better quality, faster and therefore less costly way.

The strict and vertical organization structure, which can often be seen in the government sector, unfortunately contradicts the principles of open innovation. In addition, meeting the requirements of the open innovation ecosystem seems to be quite difficult for the government structures mentioned. For this reason, instead of changing the structure of the entire institution, open innovation units can be established in government institutions. In this way, employees with innovative aspects can be brought together and employed in the relevant unit. It is easier for government institutions to allocate a budget for this restructuring than most of the private sector enterprises. These units can contribute to the government's budget by producing both process and product innovations for government institutions. Classical strict hierarchy and vertical structuring should be avoided in structuring in these units. An atmosphere should be created in which each of the team members will feel comfortable and can express themselves comfortably. Flexible working hours should be adopted, and any arrangement that would push team members to uniformity should be avoided. In addition, all other requirements of the open innovation process must be fulfilled. In this regard, academic researches and academicians can be benefited from.

Declaration of Research and Publication Ethics

This study has been carried out in accordance with the rules of scientific research and publication ethics.

Also, the study has an ethics committee approval from Afyon Kocatepe University Rectorate, Social and Human Sciences Scientific Research and Publication Ethics Committee (20.03.2020/25).

Authors' Contribution

Conceptual framework of the research was created by Prof. Dr. Belkıs ÖZKARA. The data collection and analysis sections were conducted by Assistant Prof. Dr. Sezer AYAZ. Both authors contributed equally to the article.

Declaration of Conflict of Interest

There is no conflict of interest for the authors or third parties arising from the search.

REFERENCES

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*. 50. 179-211. 10.1016/0749-5978(91)90020-T.

Ajzen, I., Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychol. Bull*. 84:888-918

Arnold, J., Cooper, C. L., & Robertson, I. T. (1991). *Work psychology. Understanding human behaviour in the workplace*. Pitman, London

Büyüköztürk, Ş. (2012). *Sosyal bilimler için veri analiz el kitabı*. Ankara: Pegem Akedemi Yayıncılık.

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö.E., Karadeniz, Ş. & Demirel, F. (2014). *Bilimsel araştırma yöntemleri* (17. Baskı). Ankara: Pegem Yayınları

Chae, B., Li, X. & Zhu, R. (2013). Judging product effectiveness from perceived spatial proximity. *Journal of Consumer Research*, 40(2), 317-335.

Chesbrough, H. (2003). *Open innovation: the new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.

Chesbrough, H. (2003). The Era of Open Innovation, MIT sloan Management Rewiew, Vol. 44, Issue 3, 35-41.

Chesbrough, H. W. & Appleyard, M. M. (2007). Open Innovation and Strategy. *California Management Review*, 50(1), 57–76.

Coulter, K. S. & Norberg, P. A. (2009). The effects of physical distance between regular and sale prices on numerical difference perceptions. *Journal of Consumer Psychology*, 19(2), 144-157.

Davidson, A. R., Jaccard, J. J. (1979). Variables that moderate the attitude-behavior relation: Results of a longitudinal survey. *J. Pers. Soc. Psychol.* 37: 1 364-76

Dodgson, M. Gann, D. & Salter, A. (2006).The role of technology in the shift towards open innovation: The case of Procter and Gamble. *Research and Development Management*, 36, 333–346.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford University Press.

Gabrenya, W. K., Arkin, R. M. (1979). The effect of commitment on expectancy value and expectancy weight in social decision making. *Pers. Soc. Psychol. Bull*. 5:86-90

Gassmann, O (2006). Opening up the innovation process: Towards an agenda. *RandD Management*, 36, 223–228.

Huang, F., Rice, J. (2009). The role of absorptive capacity in facilitating "open innovation" outcomes: a study of australian SMEs in the manufacturing sector. *International Journal of Innovation Management* Vol. 13, No. 2 pp. 201–220.

Hull, C. E., & Lio, B. H. (2006). Innovation in non-profit and for-profit organizations: Visionary, strategic, and financial considerations. *Journal of Change Management*, 6(1), 53–65. https://doi.org/10.1080/14697010500523418

JISC (2009). Facilitating Open Innovation: Landscape and Feasiblity Study, *JISC Business and Community Engagement Programme*, October.

Jun, Y., & Kim, K. (2022). Developing an Open Innovation Attitude Assessment Framework for Organizations: Focusing on Open Innovation Role Perspective and Locus of Activity. *Behavioral Sciences*, 12(2), 46.

Karasar, N. (2004). *Bilimsel araştırma yöntemleri [Scientific research methods]* (13. Ed.). Ankara: Nobel Publishing.

King, B. T., Janis, 1. L. (1956). Comparison of the effectiveness of improvised versus non-improvised role-playing in producing opinion changes. *Hum. Relat.* 9: 1 77-86

Kline, R.B. (2011). *Principles and practice of structural equation modeling*. Newyork: The Guilford Press, 3.Baskı.

Lichtenthaler, U. (2006). Technology exploitation strategies in the context of open innovation. *International Journal of Technology Intelligence and Planning*, 2(1), 1–21.

Morris, M., Bessant, J., & Barnes, J. (2006). Using learning networks to enable industrial development: Case studies from South Africa. *International Journal of Operations & Production Management*.

Nisbett, R. E., Ross, L. (1980). *Human inference: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice-Hall.

Ovacı, C. (2015). Açık İnovasyon ve Tüketicilerin Birlikte Yaratma Davranışlarını Etkileyen Faktörler. Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Doktora Tezi, Eskişehir.

Penrose, E.G. (1959). *The Theory of the Growth of the Firm.* New York: Wiley.

Powell, R. (1991). Absolute and relative gains in international relations, *American Political Science Review*, 85(4), 1303–1320.

Prajogo, D., Ahmed, P. (2006). Relationships between innovation stimulus, innovation capacity, and innovation performance. R&D Management. 36. 10.1111/j.1467 9310.2006.00450.x.

Seltzer, E., Mahmoudi, D. (2013). Citizen participation, open innovation, and crowdsourcing: Challenges and opportunities for planning. *Journal of Planning Literature*, 28(1), 3-18.

Sieg, J. H., Wallin, M. W. & Von Krogh, G. (2010). Managerial challenges in open innovation: a study of innovation intermediation in the chemical industry. *Research and Development Management*, 40(3), 281-291.

Schumpeter, J.A. (1942). *Capitalism, Socialism and Democracy*. Harper. NY.

Schwartz, S. H. (1978). Temporal instability as a moderator of the attitude-behavior relationship. *J. Pers. Soc. Psychol.* 36: 715-24

Stone, J., Cooper, J. (2003). The effect of self-attribute relevance on how selfesteem moderates attitude change in dissonance processes. *Journal of Experimental Social Psychology*, 39(5), 508-515.

Taylor, S. E., Fiske, S. T. (1978). Salience, attention, and attribution: Top of the head phenomena. *Advances in Experimental Social Psychology*, 11, 249-288.

Thomas, M., Tsai, C. I. (2012). Psychological distance and subjective experience: How distancing reduces the feeling of difficulty. *Journal of Consumer Research*, 39(2), 324-340.

Ural, A., Kılıç, İ. (2005). *Bilimsel araştırma süreci ve SPSS ile veri analizi.* Ankara: Detay Yayıncılık.

West, J., Gallagher, S. (2006). Challenges of open innovation: The paradox of firm investment in open-source software. *Research and Development Management*, 36, 319–331.

Wicker, A. W. (1969). Attitudes versus action: The relationship of verbal and overt behavioral responses to attitude objects. *J. Soc. Issues* 25:41-78

Vrande, V. V. D., Jong, J. P. J. D., Vanhaverbeke, W. & Rochemont, M. D. (2009). Open innovation in SMEs: Trends, motives and management challenges. *Technovation*, Volume 29, Issues 6–7, 423-437.