

MANAGEMENT

THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP, FIRM PERFORMANCE AND THE ROLE OF ENTREPRENEURSHIP ORIENTATION*

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ABSTRACT

Changeable and unpredictable environmental conditions emphasize the importance and meaning of entrepreneurship in the survival of enterprises. These conditions underline the leadership, which is primarily responsible for the integrity and success of businesses, as well as the entrepreneurial activity of firms. In this context, this study aims to investigate the relationship between transformational leadership, firm performance and the role of entrepreneurship orientation in techno-park firms which play an important role in the production of domestic and national technology in our country. Entrepreneurship orientation and transformational leadership were approached as internal intangible resources and discussed in the context of the resource-based approach. The sample of this study consists of founders/owners and top-level managers of techno-park firms. A cross-sectional study was conducted on 175 technopark firms in Istanbul, Ankara and Izmir. Results indicate that transformational leadership has a positive effect on organizational performance and entrepreneurial orientation has a full mediating effect between transformational leadership and firm performance.

Keywords: *Transformational Leadership, Entrepreneurship Orientation, Firm Performance, Technopark, SME*

YÖNETİM

DÖNÜŞÜMCÜ LİDERLİK VE FİRMA PERFORMANSI İLİŞKİSİNDE GİRİŞİMCİLİK EĞİLİMİNİN ROLÜ

ÖZ

Değişken ve öngörülemeyen çevresel koşullar işletmelerin hayatta kalabilmesinde girişimciliğin önem ve anlamını vurgulamaktadır. Bu koşullar, işletmelerin bütünlüğünden ve başarısından birinci derecede sorumlu olan ve aynı zamanda firmaların girişimcilik faaliyeti ile alakalı olan liderliği ön plana çıkarmaktadır. Bu çalışma ile de ülkemizde yerli ve milli teknoloji üretiminde önemli rol oynayan technopark firmalarında dönüşümcü liderlik, firma performansı ve bu ilişkide girişimcilik eğiliminin rolü araştırılmıştır. Girişimcilik eğilimi ve dönüşümcü liderlik içsel soyut kaynaklar olarak ele alınmakta ve kaynak temelli yaklaşım bağlamında tartışılmaktadır. Araştırmanın örneklemini İstanbul, Ankara ve İzmir'deki technopark firmalarının kurucuları / sahipleri ve üst düzey yöneticileri oluşturmuş, 175 technopark firması üzerinde kesitsel çalışma yapılmıştır. Sonuçlar dönüşümcü liderliğin firma performansı üzerinde olumlu bir etkiye sahip olduğunu ve girişimcilik eğiliminin dönüşümcü liderlik ile firma performansı arasında tam aracılık etkisi olduğunu göstermiştir.

Anahtar Kelimeler: *Dönüşümcü Liderlik, Girişimcilik Eğilimi, Firma Performansı, Technopark, SME*

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1. INTRODUCTION

If we consider entrepreneurship and innovation activities as a spear for a country's economy, techno-park firms can be seen as the tip of this spear in terms of the conditions and positions provided. Techno-park firms create job opportunities, contribute to the development of local areas, increase productivity growth, (Fukugawa, 2006, p. 382; Tether & Storey, 1998, p. 969) and as means of producing technology, it emerges as institutions that will free the country from dependence (Kıncal, 2014, p. 1). In this context, approximately 2.4 billion TL has been spent (*10th Development Plan (2014-2018)*, 2013, p. 85) to establish research infrastructures in public institutions and universities in addition to attractive tax opportunities granted to techno-park companies.

However, countries may not only be able to increase the rate of innovation and entrepreneurship by increasing the number of financial resources allocated to industrial infrastructure and research activities. Despite an increase in the expenditure of R&D in GDP, the number of scientific documents, and the number of people in science; it is seen that Turkey is at the lower level in terms of R&D intensity (Kayalidere, 2014). In the leading countries with respect to technological development such as EU, USA, Japan and South Korea's R&D intensity vary between 1.96 – 4.55. This ratio in Turkey is 0.96 ("Statistics | Eurostat," 2019). In this context, it can be stated that there is a need for initiatives and formations that support technological acceleration (Kayalidere, 2014, p. 84). Based on these pieces of information we thought that also developing behavioral dimensions that can encourage entrepreneurs to engage in innovative and entrepreneurial activities might be helpful too. In this case, the importance of leaders who are primarily responsible for the integrity, reliability, and success of enterprises emerges.

Leaders are chiefly responsible for the accomplishment or collapse of organizations, and they are the source of inspiration and hope (Bennis, 2009, p. 5). This explanation associated with transformational leaders who are visionaries and adopts the dreams of the future to the members of the organization effectively and arouses the desire to implement (Eraslan, 2006, p. 4). They have a continuous learning tendency, to have excellent communication skills, to see changes as an opportunity, to have an ambitious and robust intuition power (Hellriegel & Slocum, 2011, p. 329).

Transformational leadership (TL) behavior is vital for a company's entrepreneurial oriented practices. Because TL behavior is a field of study where "the followers trusts and respects their leaders and is motivated to do more than expected" (Engelen, Gupta, Strenger, & Brettel, 2015, p. 2; Yukl, 1989, p. 272). This environment may prevent employees from resistance to new initiatives in organizations and can reduce stress, (Baysak & Yener, 2015, p. 87), enhance commitment (Rowold, Borgmann, & Bormann, 2014, p. 147) and in particular, uncertainty associated with risk-taking, innovative, and proactive activities (Monsen & Boss, 2009, p. 78). Thus, firms can outperform their competitors in a fluctuated environment.

In today's complex and inconstant environment, leading firms have different competencies such as leadership that enable them to perform high performance, and

companies need to develop and maintain distinctive competencies invariably that differentiate them from their rivals (Menguc, Auh, & Shih, 2007, p. 314). The resource-based view asserts that organizational achievement relies on capabilities and resources that have particular attributes (Galbreath, 2005, p. 989). According to Barney (1991, p. 101) the resource of firms classified into physical, human, and organizational capital resources, and these resources have to be, rare, valuable, non-substitutable, and inimitable. A managerial resource might be seen as a crucial alluring resource because it interrelates directly to human capital that sparks proactiveness, motivates risk-taking and could affect innovation capability (M. Muchiri & McMurray, 2015, p. 5). Entrepreneurship orientation (hereinafter referred to as EO) can be root of a sustainable competing advantage as late as organizations devote too much time to build up an entrepreneurial culture that conducive them to superior performance. So, EO can be considered as an internal organizational capability (Arham, 2014, p. 106; Lee, Lee, & Pennings, 2001, p. 3). In this manner, leadership and EO can be seen as internal intangible resources that are crucial in the comprehension of an organization's competitive performance. So, based on conceptual plausibility, this study tries to examine firm performance through EO and TL as a source of competitive advantage and investigates the relations among these variables.

The effect of TL on firm performance was investigated with different factors such as competition strategy, but these studies seem quite limited (Lorena, Jiménez, & Martínez-Lorente, 2018, p. 413; M. K. Muchiri, 2013, p. 4) and researchers investigate the effect of internal influencers' role on EO and firm performance (Covin, Green, & Slevin, 2006, p. 57; Engelen et al., 2015, p. 732). Besides numerous studies have indicated that firm performance and EO is positively related (Engelen, Flatten, Thalmann, & Brettel, 2014, p. 732) but certain probabilities influence the strength of this relation (Engelen et al., 2015, p. 1069) and it is known little about how EO affect firm performance (Jiang, Yang, Pei, & Wang, 2016, p. 1). Furthermore, it has been considered necessary by some scholarship to investigate the impact of efficient leadership on the fulfillment of EO (Engelen et al., 2015, p. 1070; M. Muchiri & McMurray, 2015, p. 2). In a nutshell, there is a consensus in the literature that EO necessitates being well handled within the firm to reach its total potency (Engelen et al., 2015, p. 1070). To contribute to these researches and participate in filling the gap in the literature EO, firm performance, and TL relationships were studied in small and medium-sized (SME) companies operating in techno-parks. In this way, this study might be helpful for practitioners and enlarge understanding of key EO questions to present more clarity and conciseness to the literature. Also, techno-park companies that provide great support to the development of the country by producing domestic and national products may benefit from EO's benefactions to performance through leadership.

The aspect of the research is devised as follows, in the next section, the literature review is carried out and hypotheses are developed to establish the basis of the research. After that, the methodology is explained. Finally, there is a discussion section with restrictions, implications, and suggestions for future studies.

2. LITERATURE REVIEW AND HYPOTHESES

2.1 Transformational Leadership

The TL approach proposed by Burns (1978) expresses change and reform. TL, which is not accustomed to the status quo, aims to address and solve problems from different perspectives by changing employee behavior patterns (Robbins & Judge, 2013, p. 382). It is seen that some of the characteristics of TL, which is defined as the person who creates high motivation and performance on employees, are also linked to entrepreneurship qualities. These features might be defined as to be in a continuous learning tendency, to have excellent communication skills, to see changes as an opportunity, to have an ambitious and robust intuition power (Hellriegel & Slocum, 2011, p. 330). According to Burns, transformational leaders, who are described as masters of change, are the only leadership styles capable of creating new areas in modern organizations (Goethals, Sorenson, & Burns, 2004, p. 1502). These types of leaders are visionary. Adopts the dreams of the future to the members of the organization effectively and arouses the desire to implement (Eraslan, 2006, p. 4).

2.2 Entrepreneurship Orientation

EO, an indispensable component of the concept of strategic decision, demonstrates the purpose and activities of key decision-makers in a dynamic process (Lumpkin & Dess, 1996, p. 136). Initially conceptualized by Miller (1983;770), EO covers a firm's tendency towards innovation, proactivity and risk-taking. An organization's entrepreneurship tendency is described by the degree to which senior administrators tend to take business-related risks, support change and innovation, and aggressively contend with other firms to gain competitive advantage (Covin & Slevin, 1989, p. 77). EO, which is a competitive strategy that plays a crucial role in innovation and value creation, has been addressed with the dimension of innovation, proactivity, and risk-taking in most of the researches (Jiang et al., 2016, p. 2; Rauch, Wiklund, Lumpkin, & Frese, 2009, p. 763; Yeşil, Doğan, & Doğan, 2016, p. 156). Innovation refers to the firm's tendency to support and participate in new ideas, experiences and creative continuity that will lead to new product-service or technological processes. The second dimension of proactivity refers to the pioneering company taking advantage of market opportunities to shape the environment, influence trends and even create demand (Lumpkin & Dess, 1996, p. 139). The third dimension is risk-taking, the ability of an organization to act bravely through accepting uncertainty and providing important resources for initiatives in uncertain environments (Rauch et al., 2009, p. 763).

2.3 Firm Performance

The intensely competitive environment and rapidly changing environmental conditions necessitate a useful analysis of the current situation and accurate

performance measurement for the enterprises to adapt to the environmental conditions and reach the goals they have determined.

The term of performance is often identified or related to effectiveness and efficiency. Lebas & Euske (2002, pp. 67–68) defined the performance is the financial and non-financial information indicators about the degree to which the firm achieves its objectives and results. With the descriptions in the literature, the concept of performance might be defined as the qualitative and quantitative expression of the degree of achieving the goals determined by the individual, group, or organization.

How organizational performance should be measured is one of the problems that researchers faced in the field of management from past to present (Yeşil et al., 2016, p. 155). In the literature, depending on the purpose and qualification of the research, qualitative or quantitative, objective or subjective, primary or secondary measurements are made (Özşahin, 2011, p. 71). In this research firm performance was perused through subjective measurement.

3. HYPOTHESES DEVELOPMENT

In a rapidly changing and developing the world, businesses have to be proactive, risk-taking and innovative in adapting to environmental conditions quickly to maintain a sustainable competitive advantage. In these circumstances, an extensive understanding of leadership has become more critical than ever to ensure superior performance in today's organizations. Transformational leaders evolve their workers to make possible them to acquire leadership roles and act further certain standards of performance or goals (Bass & Avolio, 1994, p. 67). They inspire their followers to work on shared goals, describe an appealing vision and goals, stimulate subordinates to achieve them, create a confidence environment, and motivate them to consider and answer problems in new ways. TL can create an entrepreneurial environment in the activities of the employees with the positive gains it has created. According to studies TL have positive effect on decreasing stress (Baysak & Yener, 2015, p. 87; Salem, 2015, p. 240) which might be an important factor for creating productive environment, and also TL enhancing team and organizational level performance (Wang, Oh, Courtright, & Colbert, 2001, p. 223). In addition, according to numerous studies TL has a positive effect on EO. (e.g., Engelen, Vishal, Strenger, & Brettel, 2012, p. 12; Gumusluoglu & Ilsev, 2009, p. 461; Hashim, Omar, Hamzah, & Umar, 2018, p. 37; Moriano, Molero, Topa, & Mangin, 2014, p.103). The following hypothesis can be produced as a result of all information and previous studies results.

H₁: Transformational leadership has a positive effect on entrepreneurship orientation.

In an environment of high environmental uncertainty and ruthless competition, companies are faced with the pressure of being more entrepreneurial than ever (Kantur, 2016, p. 24). Aziz, Mahmood, Tajudin, & Abdullah (2014, p. 221) stated that firm-level entrepreneurship helps firms succeed in an uncertain and volatile

environment of uncertainty. Maintaining entrepreneurial thoughts, faiths, and practices within the organization generates great alterations in the performance of firms. Potential performance results may increase as more risky, innovative and uncertain opportunities as taken (Wales, 2016, p. 5). The impact of EO on performance has attracted the attention of researchers in recent years (Zehir, Karakadilar, Gogus, & Basar, 2019, p. 3) and some studies indicated the relationship between these two variables. For instance, Innovativeness has been acknowledged as a factor that significantly contributes to product performance (Avlonitis & Salavou, 2007, p. 573). Arham stated (2014, p. 266) that innovativeness and proactiveness have a positive and significant relationship to organizational performance. Jiang et al., (2016, p.10) also expressed a strong relationship between EO and financial performance. Thus, following hypothesis is offered.

H₂: Entrepreneurship orientation has a positive effect on firm performance.

Leadership literature states that effective leadership practices positively affect organizational commitment (Öztekin, İşçi, & Karadağ, 2015, p. 66) by fostering the motivation of employees (Bushra, Ahmad, & Naveed, 2011, p. 261) and increase the overall performance of the organization (Shin, Sung, Choi, & Kim, 2015, p. 43). In this manner, transformational leaders can improve business performance with the organizational environment they have created and literature gives examples. For instance, Lorena et al., (2018, p. 422) found that TL positively affect an organization in point of efficiency and productivity by decreasing production costs. Ng's (2017, p. 385) findings showed that TL related to task performance, innovation behavior, and organizational citizenship behavior. The other researchers (Hashim et al., 2018, p. 37; Zumitzavan & Udchachone, 2014, p. 277) also claimed firm performance and TL relationship. Hence following hypothesis proposed.

H₃: Transformational leadership has a positive effect on firm performance.

Transformational leaders, who are described as masters of change, are the only leadership styles capable of creating new areas in modern organizations (Goethals et al., 2004, p. 1502). Previous studies indicated that TL and EO relationship (e.g., Engelen, Vishal, Strenger, & Brettel, 2012, p. 19; Gumusluoglu & Ilsev, 2009, p. 461; Hashim, Omar, Hamzah, & Umar, 2018, p. 37; Moriano, Molero, Topa, & Mangin, 2014, p. 103). Maintaining entrepreneurial thoughts, faiths, and practices within the organization affect the performance of firms (Wales, 2016, p. 5). Former study results showed the EO and firm performance relation (e.g., Arham, 2014, p. 266; Avlonitis & Salavou, 2007, p. 573; Jafar, 2018, p. 878) Furthermore, transformational leaders with their vision, excellent communication skills, seeing changes as an opportunity, and ability to robust intuition power they create an environment fostering organizational performance (Hellriegel & Slocum, 2011, p. 330). Numerous studies asserted TL and firm performance relationship (e.g., Hashim et al., 2018, p. 37; Lorena et al., 2018, p. 422; Ng, 2017, p. 385; Zumitzavan & Udchachone, 2014, p. 277). With the support of the literature and the results of previous researches, the mediating effect of EO between TL and firm performance can be expected. Hence, the following hypothesis is proposed.

H4: Entrepreneurship orientation has a mediating effect between transformational leadership and Firm Performance.

Based on the information obtained from the literature and the hypotheses generated, the following model was composed and showed in Figure 1.

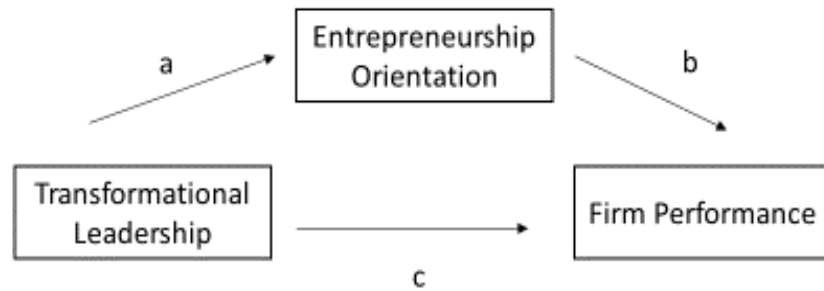


Figure 1: Research Model

4. METHODOLOGY

4.1 Sample and Data Collection

This quantitative study aims to identify the relationship between transformational leadership, firm performance, and the role of entrepreneurship orientation in techno-park firms. Therefore, a field survey was conducted to measure these relationships. The scope of the research consists of the 175 companies operating in techno-parks in Istanbul, İzmir and Ankara. These 3 different metropolises were chosen since developed in terms of industry, infrastructure, transportation etc. Surveys prepared within the scope of the research were sent to 2100 companies and kindly requested to answered by top managers through email whose contact information of companies was reached previously from web pages. However, even some of the participants wanted to participate the study they couldn't because of their companies very recent established and also some emails couldn't deliver to companies. This might be one of the limitations of this study. Consequently 212 responded data gathered and after elimination of unsuitable surveys 175 companies' top managers were pulled as a subset of total population. The research focus was directed to each company's top-level managers or owners and random sampling method was used. In addition to that firms were informed for further information about the research aim via telephone or email. Since the responses to the surveys embody the managers' answers to the surveys this event might be somewhat a limitation, but many studies have also followed this method. Nevertheless, this situation will be mentioned in the discussion

chapter as a limitation of the study. The data derived from questionnaires were analyzed and tested through SPSS 22, and to precisely identify whether or not there is a mediating effect on the model, SOBEL test was conducted. Table 1 shows demographic characteristics of the sample.

Table 1. Demographic Characteristics of Sample

		Number of Participants	Percentage
City (n=175)	Ankara	99	56.6
	İstanbul	59	33.7
	İzmir	17	9.7
Position (n=175)	Founder/Owner	62	35.4
	High Level Manager	113	64.6
Firm Scale (n=175)	Small Scale Enterprises	163	93.1
	Mid-Scale Enterprises	12	6.9

4.2 Measures

The scale developed by Carless, Wearing, & Mann, (2000) was used to measure the leadership style of the managers participating in the research. The scale has one dimension and consists of seven items. Since it is a short scale that easy to administer and score, it was seen as a significant advantage of the scale. The managers were requested to signalize their degree of adjustment with leadership scale's statements on a five-point Likert scale ranging "never =1" to "always=5". This scale was revised in a way that managers could evaluate themselves and translated into Turkish.

EO scale (Covin & Slevin, 1989) translated into Turkish by Üstün (2015). The scale consists of 3 dimensions and 9 items. The first three items of the scale are the innovativeness dimension, the second three items are the proactiveness dimension, and the last three items are the risk-taking dimension. This scale measures managers' perception of expressions at the level of semantic differences. It is designed as a 7-point. Widespread use of scale in researches (Boso, Story, & Cadogan, 2013, p. 9; Zahra & Covin, 1995, p. 52), having high reliability, and validity in intercultural studies (Anderson & Eshima, 2013, p. 420; Raj, Javalgi, & Todd, 2011, p. 1007), and also one of the four different scales recommended for use by Covin & Wales (2012, p. 15) can be expressed as the reason for the selection in our study.

Subjective performance scale consists of one dimension and 5 items developed by (Khandwalla, 1977) and translated into Turkish by Özşahin (2011). Participants were asked to evaluate their firms concerning long-term profitability level, sales/income increase, employee morale, and job satisfaction, firm's image among the public and financial strength (financial resources capacity, liquidity power) considering the sector average on a five-point Likert scale ranging "very low =1" to "always=5". Since the scale has high reliability in previous studies (Gurel, 2017, p. 241; Özşahin, Zehir, & Acar, 2011, p. 1554) and used frequently in the literature can be expressed as the reason of its use in our research.

In the following table factor and reliability analysis results indicated. KMO and Bartlett's Sphericity Test were used and varimax method conducted to decide the

appropriateness of the data for factor analysis. After factor analysis conducted for each variable it was observed that both The Global Transformational Leadership Scale developed by Carless, Wearing, & Mann, (2000) and Subjective performance scale developed by Khandwalla (1977) have one dimension and for that reason factor loadings did not included Table 1. As to EO scale (Covin & Slevin, 1989) one of the items belong to innovativeness dimension deleted since factor loading below 0.50 and reconducted factor analysis for EO scale. Finally, it was seen that all items belong to EO were collected under two variables. First dimension 5 and second dimension consisted 3 items. After factor analysis procedure completed, reliability analysis conducted and it was seen that all variables have sufficient value. As regards to factor analysis results, it might be said that participants perceived EO's subfactors' proactiveness and innovativeness in a same manner due to these are gathered together. Those items with factor loadings illustrated in Table 2. For each factor, Cronbach's Alpha values exceeded 0.70; Table 3 shows the reliability of the scales used in this questionnaire.

Table 2. Factor Analysis Results of EO

	Innovativeness/Proactiveness	Risk Taking
Proactiveness 2	.835	
Proactiveness 3	.800	
Proactiveness 1	.775	
Innovativeness 2	.736	
Innovativeness 3	.601	
Risk Taking 3		.888
Risk Taking 2		.811
Risk Taking 1		.649
Total explained variance for Transformational Leadership % 57.098		
Total explained variance for Entrepreneurship Orientation % 56.286		
Total explained variance for Firm Performance %54.939		

Table 3: Sources of Scales and Cronbach Alpha Values

Concepts	Number of Items	Scale Format	Cronbach Alpha	Scale Sources
Transformational Leadership	7	LRFa	.867	Carless, Wearing, & Mann (2000)

Innovativeness/	5	LRFb	.857	Covin & Slevin, 1989
Proactiveness	3	LRFb	.816	Covin & Slevin, 1989
Risk Taking				
Firm Performance	5	LRFc	.792	Khandawalla (1977)

Notes: a. Likert Response Format (LRF): (1=never to 5= always)
 b. Semantic Differential Scale: (7 point)
 c. LRFc: (five point 1=very low to 5= very high)

5. RESULTS

In the study, Baron and Kenny's (1986) mediation effect analysis method was used to test the hypotheses. The indirect effect of the mediating variable, which mediates the effect of the independent variable on the dependent variable, was examined. It should be observed that the independent variable decreases or becomes zero and also Sobel's (1982) test was conducted to measure the significance of the indirect effect. Sobel test values were calculated with the help of an online analysis program using unregulated regression coefficients and related standard error values among the related variables.

Table 4. Regression Analysis Results

Regression Model	Independent Variables	Dependent Variable	Std β	p	Adjusted R2	F Value	Model Sig.
1a	Transformational Leadership	Proactiveness/ Innovativeness	.287	.000*	.083	15.579	.000
1b	Transformational Leadership	Risk taking	.247	.001*	.061	11.210	.001
2a	Proactiveness/ Innovativeness	Firm Performance	.364	.000*	.133	26.478	.000
2b	Risk taking	Firm Performance	.345	.000*	.119	23.360	.000
3	Transformational Leadership	Firm Performance	.209	.006*	.44	7.893	.006
4a	Transformational Leadership	Firm Performance	.114	.125	.145	14.534	.000
	Proactiveness/ Innovativeness		.332	.000*			
4b	Transformational Leadership	Firm Performance	.132	.073	.135	13.455	.000
	Risk taking		.312	.000*			

*p < .05

When Table 4 is examined, it is seen that the conditions of Baron and Kenny are fulfilled. The first expectation was a significant effect of independent variable (TL) on mediating variable (EO). In the table, 1a and 1b indicates that independent variable (TL) has a significant effect of both EO's subfactors (Proactiveness/Innovativeness and Risk Taking) this condition was provided and H₁ was accepted (TL β= .287, p=.000; β= .247, p=.001).

The second condition was the mediating variable (EO) had a significant effect on the dependent variable (Firm Performance). In the table, 2a and 2b shows that both EO’s subfactors has a significant effect on firm performance. This effect was also statistically significant (Proactiveness/Innovativeness $\beta= .364$, $p= .000$; Risk Taking $\beta= .345$, $p=0.000$) and H_2 was accepted too.

The third condition was independent variable (TL) had a significant effect on the dependent variable (Firm Performance) in the table, 3th model shows that TL has a significant effect on firm performance. (TL $\beta= .209$, $p= .006$) and H_3 was accepted too.

Finally, the independent variable (TL) with the mediating variable (EO) is included in the model and the dependent variable (FP) is tried to be explained. After this stage, the meaningful effect of independent variable is expected to be insignificant (full mediator effect) or decreasing (partial mediator effect). When we examined the table in 4a it can be seen that after including mediating variable EO’s subfactor Proactiveness/Innovativeness, TL (independent variable) became meaningless (TL $\beta= .114$ $p= .125$). Therefore, Proactiveness/Innovativeness has full mediation effect. In 4b, similarly after including mediating variable EO’s subfactor risk taking TL (independent variable) became meaningless too (TL $\beta= .132$ $p= .073$). Therefore, risk taking has also full mediating effect. Consequently, since both subfactors of EO have a full mediating effect, it is urged that EO has a full mediating effect on between TL and FP and H_4 is accepted. According to these results, it can be said that EO has a full mediator effect between TL and FP. However, Sobel’s Test was also conducted to measure the significance of the indirect effect to precisely refer to the mediating effect for both regression models (4a and 4b). Sobel Test results indicated in Table 5.

Table 5. Sobel Test Results on the Mediator Role of Entrepreneurship Orientation

			Test Statistic	Std. Error	p value
<i>Transformational Leadership → Proactiveness/ Innovativeness → Firm Performance</i>					
a	0.656	Sobel	2.961	0.0376	0.003*
b	0.170	Aroian	2.921	0.0381	0.003*
Sa	0.166	Goodman	3.004	0.0371	0.002*
Sb	0.038				
<i>Transformational Leadership → Risk Taking → Firm Performance</i>					
a	0.633	Sobel	2.649	0.034	0.008*
b	0.143	Aroian	2.606	0.034	0.009*
Sa	0.189	Goodman	2.695	0.033	0.007*
Sb	0.033				

* $p < .05$

According to the results of the analysis, Sobel ($p=0.003$; $p= 0.008$), Aroian and Goodman test values showed significant results as shown in Table 5. The significant Sobel Test confirms the existence of a full mediator effect of EO between TL and FP. As a summary of this study, all hypotheses were accepted.

6. DISCUSSION

This study has examined the relationships in transformational leadership, entrepreneurship orientation, and firm performance in techno-park firms. In this context we approached, leadership and EO as internal intangible resources that are crucial in the comprehension of an organization's competitive performance.

There were various studies questioning TL and firm performance (e.g., Lorena et al., 2018; M. K. Muchiri, 2013; Jafar, 2018) but it was considered necessary by some researchers to investigate the impact of effective leadership on the implementation of EO (e.g., Engelen et al., 2015; M. Muchiri & McMurray, 2015). To contribute to filling this gap in the literature and presenting more clarity and conciseness, this study is conducted in addition to gain a different perspective in terms of leadership to techno-park companies that provide great support to the development of the country by producing domestic and national products. The validity of the study findings is limited to the tools used and the honesty of the participants' responses. Besides, it can be said that a limited number of samples is one of the important restrict of the study.

According to the regression analysis results, the study indicate that TL positively affects both EO's sub-dimensions which are proactiveness/ innovation and risk-taking. Further, results show that TL positively affects firm performance too. In addition to that EO's both sub-dimensions show full mediating affect between TL and firm performance. This implies that TL plays a significant role as the contributory factor in the improvement of both EO and firm performance. Clearly, the results support all the hypotheses pointing that a TL through EO has an impact on organizational performance and the analysis results exhibited a resemblance to previous studies (e.g., Arham, 2014; Avlonitis & Salavou, 2007; Engelen et al., 2012; Hashim et al., 2018; Jing, 2016; Lorena et al., 2018; 2012; Zumitzavan & Udchachone, 2014). In this context, it can be said TL and EO can be intangible organizational resources that affect firm performance at the organizational level.

Leadership is an indispensable reality of our lives, and it affects our world in every aspect. However, the changing and evolving world requires a new leadership paradigm as the most comprehensive challenge facing leaders today. The new reality requires a transition from stagnation to change, control to reinforcement, a competition to cooperation and uniformity to diversity. These striking changes reveal that a management philosophy based on control and personal aspirations may fall in the new period. The understanding of leadership will be effective with the thinking structure based on human skills, honesty and teamwork (Daft, 2014, p. 12). It is clear that with effective leadership styles, organizations will be more courage to catch tacit opportunities and will be more efficient. Managers adopting TL style will be more fortunate to adapt to changing world conditions.

Technology production is a tedious long way that requires patience, time, and intensive R & D work. Obtaining the desired results from the techno-parks, spawn the real outcomes of the investments sometimes takes time surpassing ten years (Kıncal, 2014, p. 2). In this long journey embracing TL style might be helpful to achieve

desired results. For that reason, organizations should strive to popularize TL, and managers should espousal TL style since it has a positive effect on firms' EO and performance.

This study was carried out in small and medium scale techno-park firms in three different metropole which were developed in terms of industry, infrastructure, transportation, etc. Thus, it might be useful to conduct a study over other Anatolian cities' techno-park firms to reveal whether there is a difference or not for future studies. In addition to that future studies should use different instruments and that might consolidate the validity of the results. And also, it may be useful to explore this study from other leadership styles since TL is very popular in literature. Besides, since this study was at the organizational level, managers formed the sample and were asked to evaluate their leadership characteristics and the performance of their firms, next studies sample may consist of firms' employees. Multiple informants might improve validity of the results.

7. REFERENCES

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