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MEDIATING ROLE OF INNOVATION CAPABILITY, ON LEARNING ORIENTATION AND FIRM PERFORMANCE

Cemal Zehir (a), Dilek Karaca (b)*
*Corresponding author

(a) Yıldız Technical University, 77200, İstanbul, Turkey
(b) Yıldız Technical University, 34349, Istanbul, Turkey, Email: karacadilek1@gmail.com

Abstract

The aim of this research is to put out with an application on the manifacturing sector enterprises in Istanbul to the learning orientation and performance relation and mediating role of innovation capability. The study primarily provides literature knowledge about the learning orientation, innovation capability, and firm performance. After in this context, research model and related hypotheses have been developed. In order to test the research hypotheses, a total of 512 managers of the 141 manufacturing companies operating in the manufacturing sector in Istanbul has used the data obtained by the questionnaire method. Out of 512 administrators collected data by using the SPSS software program. As a result of this study, it was determined that innovation capability has a partial mediator effect on learning orientation dimensions and firm performance. These empirical findings show that in the manufacturing sector in Istanbul, enterprises can provide a competitive advantage by improving their innovation capability with a learning orientation approach.

Keywords: Learning orientation, firm performance, innovation capability.

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1. Introduction

In the changing world order, understanding of competition has been developing rapidly in recent years. Organizations increasingly need dynamic management practices to keep pace with this pace. In this rapidly changing global competitive environment, organizations need to use information effectively and their innovation capability to survive. For this, it is important for organizations to adopt learning-oriented understanding.

The learning-oriented approach is also refered to as organizational learning in the literature (Sinkula et al., 1997). In theory, as an approach to developing the hermeneutic philosophy on the basis of an interpretive paradigm, the American scientist Donald Schön has emerged to orientation on learning at the organizational level. The environmental conditions that undergo radical changes with technology push organizations to learn. Learning at the organizational level provide to make a change on the basis of the organization. When the learning orientation is addressed in all its dimensions, the organization provides a unique organizational learning by questioning assumptions the underlying values of all strategies (Hatch & Cunliffe, 2006). Therefore, to make learning orientation sustainable with innovation capability is very important for organizations that are in a seriously competitive environment.

Innovation Capability is seen as the development and management of the necessary knowledge and capability using existing technology to create innovations.

In this era of high-technology applications with rapid change, it is deemed necessary for organizations to develop innovative capabilities, because innovation capabilities enable organizations to compete and survive for a long time in a globalized environment (Romijn & Albaladejo, 2002; Keskin, 2006; Calantone et al., 2002). Learning orientation and innovation capability have been regarded as worthy of investigation because the importance of the organizations is undeniable as explained above.

In this study, four dimensions of learning orientation and innovation capability of organizations in relation to performance are discussed. In terms of learning orientation, innovation has been studied in detail. Recently developed scales related to learning orientation, firm performance and innovation capability have been used.

For this reason, it is expected that the study will contribute to the advancement of science in the management field and to the development of the Turkish business world in the competitive global trade environment.

2. Literature Review and Theoretical Framework

2.1. Learning Orientation

Nowadays, organizations can provide the competitive advantage to produce the information and to use it effectively to carry out the activities. In this context, learning orientation is defined as an orientation that enables the use of the necessary information for the organization and its spread within the organization (Calantone et al., 2002).

The learning-oriented approach is named as organizational learning in the literature (Sinkula et al., 1997) on learning at the organizational level in his learning theory. American scientist Schon (Schon & Argyris, 1978) has a theory about learning orientation and he emerged as a developing concept with a focus

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on learning at the organizational level in learning theory. The environmental conditions that undergo radical changes with technology push organizations to learn. At the organizational level, learning leads to a change on the basis of organization. Learning orientation; provides a dynamic organizational learning by intergating the assumptions underlying the goals, plans, policies, and strategies of the organization (Hatch & Cunliffe, 2006).

Authoritarian processes of knowledge production and structures do not support organizational learning.These structures make it difficult for the individual to question the way it is accepted and prevent it from developing a behavior to recreate (Schon & Argyris, 1978). Learning-oriented organizations encourage their employees to question their organizational norms, values and practices that drive their organizational activities. They influence members of the organization to encourage and overcome their boundaries (Baker & Sinkula, 1999; Garvin, 1993; Paparoidamis, 2005; Laverie et al., 2008; Sinkula et al., 1997).

Senge (1990) has an approach to learning organizations that brings learning-oriented organizations to the agenda and describes how learning organizations should be able to adapt and even give direction to rapidly changing market conditions. According to Senge (1990), five basic disciplines need to be applied successfully in order to establish a learning organization. Five disciplines of learning organizations, according to Senge are system thinking, personal mastery, mental models, shared a vision and team learning.

Learning orientation can be defined as the creation and use of organizational knowledge that enhances competitive advantage. Learning orientation is usually measured in four dimensions in the literature. These four dimensions are team orientation, system orientation, learning orientation and shared memory orientation.

If an organization don't have effective and efficient knowledge sharing, there is no effective learning in the organization (Calantone et al., 2002).

Team orientation is about team members and their success in working together. All members must complement each other and adopt an orientation that will serve the same purpose.

The system orientation is that all departments and employees are creating an effective system at the level of high rationalization.

The learning orientation demonstrates the ability to achieve success, to use knowledge and to adapt to new circumstances.

The common memory orientation shows the importance of shared memory in the formation of organizational culture. In organizations, all employees have common backgrounds and values.

All these sub-dimensions accelerate learning in organizations, enabling organizations to quickly adapt to the environment and increase their productivity (Pedler, Burgogyne, & Boydell, 1997; Baker & Sinkula, 2007). According to the literature, it is seen that there is a relation between learning orientation and business performance.

2.2. Innovation Capability

According to the literature of OECD (Organization for Economic Co-operation and Development), innovation; "As a process to transform an idea into a marketable product or service, a new or improved manufacturing or distribution method, or a new social service method".

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Innovation in the organizational sense means that introduction of a new organizational method in business practice or a new marketing method, in the organization of the workplace or, in the external relations of the company ("Oslo Guideline", 2005).

Innovation aims not to find the undiscovered, but to discover the processes of creating value. Innovation is regarded as an activity with continuity. It is clear that the competitive advantage of a single innovation is risky and unsustainable, given the speed of the developing technology in the last century, the changing expectation of the customer, and who easily access information and technology and supposed to imitate innovation. For this reason, innovation has to be identified with the company culture by becoming a continuous activity (Kırım, 2005). Micro and macro-scale businesses who want to gain competitive advantage and who want to be more active and productive in production, if they can have innovation culture into the their economic culture, they can have the opportunity to capture the scale goals (TÜSİAD, 2003).

Innovation Capability can be defined as the development and management of the necessary knowledge and skills using existing technology to create innovations. In this age of high-tech applications with rapid change, it is considered necessary for organizations to improve their capability to innovate, as organizations are able to excel in globalizing competitive markets and sustainability of this dominance is in direct proportion to innovation capabilities (Keskin, 2006; Calantone et al., 2002).

At the same time innovation capability has an important prequisite for innovation performance, as the product life span is short and new product introductions are high. It is very difficult to imitate an organization with high innovation capacity on the market because the cost of imitating and transferring the information underlying the innovation is very high due to the difficulty of imitating the verbal content of R & D activities. This feature of R & D capability contributes to the competitive advantage of organizations as it triggers the success of innovation (Cavusgil, Calantone, & Zhao, 2003).

2.3. Firm Performance

Performance shows the degree of goals and outcomes of organizational strategies that were achieved. It determines how much the quantitative and qualitative targets are reached. Performance is the most important output that is required to make your permanent success (Porter, 1991; Agus & Ridzuan, 2001).

Performance can be measured in two-dimensional classification. The first dimension could distinguish financial and operational indicators, the second could separate primary and secondary sources of information.

Financial measures include accounting values and economic performance, whereas operational measures include to success factors affecting financial performance, such as customer satisfaction, quality, market share, or new product development (Venkatraman & Ramanujam, 1986). In this study, the financial dimension of performance is evaluated.

H_1:Learning orientation dimensions influence firm performance positively.

H_2: Learning-orientation dimensions influence innovation capability positively.

H_3: Innovation capability affects firm performance positively.

H_4: Learning-orientation dimensions influence firm performance positively through innovation capability

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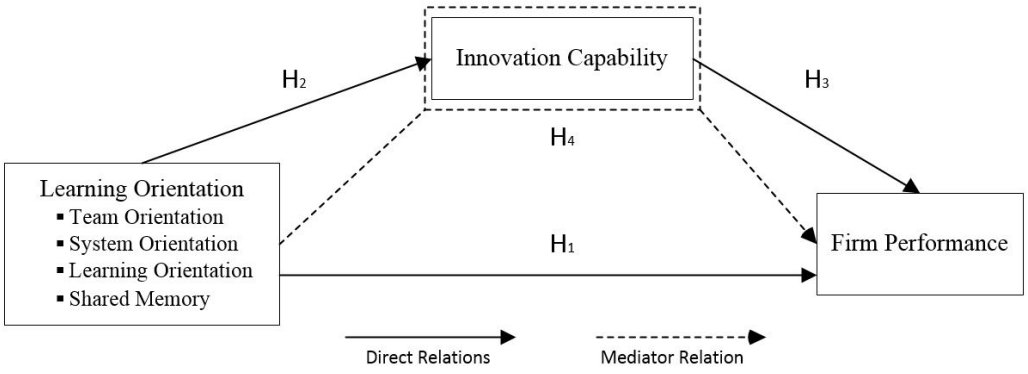

Figure 01. Research Model

3. Research Method

3.1. Sample and Data Collection

This study is designed to investigate the mediator effects on the learning orientation of the innovation capability of firms operating in the manufacturing sector in Istanbul. There are similar works in the literature (Calantone et al., 2002), but in this study different dimensions of learning orientation are considered and different scales are used.

The data of the study were obtained from the questionnaires collected from 512 medium and high level managers of 141 enterprises operating in the manufacturing sector in Istanbul between 2016-2017. All dimensions and relationships of the study were measured with a total of 34 questionable Likert type scales available in the literatüre (see Table 1).

Table 01. Sample Demographics

Firm Operation Field	***Frequency***	***Valid Percent***	**Sub Sectors**	***Frequency***	***Valid Percent***
Local	13	9,4%	Food	10	7,1%
National	28	20,1%	Wood / Paper	4	2,9%
Global	98	70,5%	Medicine / Medical	9	6,4%
Firm Size	***Frequency***	***Valid Percent***	Textiles	8	5,7%
Below 100	14	9,9%	Machine	9	6,4%
100-500	35	24,8%	Automotive	16	11,4%
500-1000	22	15,6%	Furniture	2	1,4%
Above 1000	70	49,6%	Chemical	8	5,7%
Firm Age	***Frequency***	***Valid Percent***	Main Metal	8	5,7%
below 10	7	5,0%	Electric Machines	7	5,0%
10-25	34	24,1%	On Stone and Soil	2	1,4%
25-50	63	44,7%	Other production	57	40,7%
above 50	37	26,2%	***Total***	***141***	***100,00***

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3.2. Measures

The 19-item Hult et al. (2003) scale was used to measure the learning orientation, the 7-item Liu, Luo and Shi (2002) scale for innovation capability, and the 8-item Awwad and Mamoun (2016) scale for firm performance.

3.3. Factor Analysis, Reliabilities and Correlations

Exploratory factor analysis was performed to display the scales belong to the variables used at the research has been perceived by the participants in what scale and under how many sub dimensions. Best fit of the data was obtained with a principal component analysis by a promax rotation. In order to test the conformity of the data set to the factor analysis, Kaiser-Meyer Olkin (KMO) sample efficiency test and Bartlett test have been applied. At the end of the analysis performed, KMO value has been over the expected level 0.50 with the 0.945 value and it has been displayed that it is meaningful at the 0.001 importance level at the Bartlett test. At the principal component analyses, sub limit of factor weights of each material have been taken as 0.45 by taking into consideration to the size of the sample (Hair, Hair, Black, Babin, & Anderson, 2010, p. 120). According to the PCA, each variant has been loaded to the foreseen factor component and factor weights have been between 0.455 and 0.787. Besides, is has been observed that factor weights have been mostly over the 0.500 value.

There are; seven items for firm items, seven items for innovation capability, five items for learning orientation, four items for system orientation, four items for shared memory and three items for team orientation. The factor analysis results are seen in Table 2.

Table 02. Factor Analysis

Factors	Items	Factor Loadings					
		F1	F2	F3	F4	F5	F6
Firm Performance	firm_perf_6	0,868					
	firm_perf_3	0,867					
	firm_perf_5	0,845					
	firm_perf_4	0,842					
	firm_perf_2	0,836					
	firm_perf_8	0,815					
	firm_perf_7	0,795					
	firm_perf_1	0,786					
Innovation Capability	inv_cap_3		0,816				
	inv_cap_1		0,766				
	inv_cap_5		0,723				
	inv_cap_2		0,680				
	inv_cap_4		0,670				
	inv_cap_6		0,581				
	inv_cap_7		0,563				
Learning Orientation	learn_ornt_3			0,762			
	learn_ornt_5			0,718			
	learn_ornt_2			0,712			
	learn_ornt_4			0,677			
	learn_ornt_1			0,562			

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System Orientation	sys_ornt_4				0,797		
	sys_ornt_3				0,712		
	sys_ornt_5				0,710		
	sys_ornt_2				0,709		
Shared Memory	sha_memo_3					0,763	
	sha_memo_2					0,578	
	sha_memo_4					0,559	
	sha_memo_1					0,542	
Team Orientation	team_ornt_2						0,707
	team_ornt_1						0,702
	team_ornt_3						0,581
Explained Varience (%)		22,434	15,045	13,701	13,385	8,465	7,422
Total Explained Varience (%)		80,454					

(i) Principal Component Analysis with Varimax Rotation
(ii) KMO =, 927 Bartlett Testi; p<0.001

In evaluation of factor reliabilities Cronbach's Alpha value was used (Table 3). On the basis of the Cronbach's Alpha value of the factors, their factor reliabilities have been seen observed that such value has been over 0.70 value that is the acceptable lowest value (Hair et al., 2010). This is also displaying that these factors have internal consistency and reliability.

Table 03. Correlations, Means and Standard Deviations

Variables		1	2	3	4	5	6	Mean	Std. Deviation
1.	Team Orientation	(0,930)						3,85	0,74
2.	System Orientation	,720***	(0,926)					3,90	0,67
3.	Learning Orientation	,767***	,725***	(0,916)				4,04	0,67
4.	Shared Memory	,726***	,738***	,748***	(0,885)			3,70	0,74
5.	Innovation Capability	,728***	,709***	,665***	,625**	(0,930)		3,87	0,67
6.	Firm Performance	,514***	,500***	,599***	,552***	,618***	(0,966)	4,12	0,66

***; Correlation is significant at the 0.001 level. Cronbach's Alpha values are represented in diagonals

Results of the correlation analysis have demonstrated that there is a meaningful and in the positive relations between the variables. VIF and tolerance values are used to determine whether the multicollinearity problem or not. Because of the VIF values are lower than 10 and the tolerance values are higher than 0.2, the problem of multiple linear connection problem is not mentioned (Hair et al., 2010).

4. Findings

In order to test the hypotheses, we performed multiple regression analysis. Table 4 shows the results of the regression analysis. The result of regression analysis in Model 1 shows that there is a significant effect of learning orientation (β=0,386, p<0,01) and shared memory (β=0,236, p<0,05) on firm performance. There is no significant effect of team orientation and system orientation on firm performance. Explanation percentage of the model iş %36. As a result of these findings; H1 is partially supported. Model 2 indicates that there is a significant effect of team orientation (β=0,391, p<0,001) and system orientation

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(β=0,342, p<0,001) on innovation capability. There is no significant effect of learning orientation and shared memory on innovation capability. Thus, H2 is partially supported. Explanation percentage of the model is %59 and this demonstrated that learning orientation's explanation level for innovation capability is higher than explanation level for the firm performance. In Model 3, there is a significant effect of innovation capability (β=0,618, p<0,001) on firm performance and so H3 is supported.

To investigate the mediator effect (Baron and Kenny, 1986) of innovation capability on relationship between learning orientation's dimensions and firm performance, Model 4 was designed. We see that the effects of learning orientation and shared memory on firm performance in Model 1 are changing in Model 4 (Explanation percentage of the model is %43). The effect of shared memory is completely disappearing and the effect of learning orientation is decreasing when mediator variable, the innovation capability, is involved the model. Therefore, H4 is partially supported. According to the results innovation capability is partial mediator variable in this research.

Table 04. Regression analyses for hypotheses testing

Model 1	IVs	DV	Std. β	t	p		
	Team Orientation	Firm Performance	0,040	0,341	0,733		
	System Orientation		0,041	0,371	0,711		
	Learning Orientation		0,386**	3,218	0,002		
	Shared Memory		0,236*	2,346	,020		
	F= 21,285 R=0,367 P=0,000						
Model 2	IVs	DV	Std. B	t	p		
	Team Orientation	Innovation Capability	0,391***	4,202	0,000		
	System Orientation		0,342***	3,824	0,000		
	Learning Orientation		0,116	1,206	0,230		
	Shared Memory		0,002	0,018	0,986		
	F= 52,179 R=0,594 P=0,000						
Model 3	IV	DV	Std. B	t	p		
	Innovation Capability	Firm Performance	0,618***	9,272	0,000		
	F= 85,968 R=0,378 P=0,000						
Model 4	IVs	DV	Std. B	t	p	Collinearity Tolerance	Collinearity VIF
	Team Orientation	Firm Performance	-0,134	-1,161	0,248	0,296	3,373
	System Orientation		-0,111	-1,006	0,316	0,327	3,060
	Learning Orientation		0,334**	2,958	0,004	0,312	3,210
	Shared Memory		0,204	1,881	0,062	0,339	2,946
	Innovation Capability		0,445***	4,435	0,000	0,395	2,534
	F= 23,298 R=0,443 P=0,000						

*p<0,05, **p<0,001, ***p<0,001

5. Conclusion and Discussions

This study was based on the theoretical foundations that existed in previous studies. The main aim of this research is the variable mediator role of innovation in the relationship between learning orientation and firm performance. Increasing competition in the organizational environment and the organization's survival struggle demonstrate the necessity of adopting different management styles and understandings.

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In these findings, it is supported that the formation and development of innovation capability in organizations will help to improve the performance of the organization and indirectly help to sustain the organization.

The following findings are suggested as a result of the analysis and hypothesis of the research. As the dimensions of learning orientation learning orientation and shared memory orientation are affecting business performance positively. The reason for the inefficiency of the system orientation on the operating performance may be due to the dominant relation between the other two dimensions. Further research of this situation may be advisable. Learning orientation dimensions have been found to have a positive effect on innovation capability. This finding supports the learning-oriented understanding that organizations have developed to provide the competitive advantage in the long run with innovation capability. Also included in the findings is that innovation capability has a positive effect on firm performance. As a result of these findings, it is thought that the formation and development of innovation capability in the organizations will help to improve the performance of the organization and indirectly ensure the organization's sustainability.

Another important result of this study is innovation capability has a mediator role on learning orientation and firm performance. This finding emphasizes that organizations need to improve their learning orientation and innovation capability to gain competitive advantage and survive in the long run. At the same time, by supporting the development of innovation capability with a learning orientation understanding, it is ensured that adaptation to changing environmental conditions and the increase of firm performance is achieved.

Several limitations can be seen in this research. The limitation in the research can be said to be only considering the financial performance evaluation of the business. The qualitative performance has been ignored. In addition, performance indicator information was measured only in subjective opinion in the questionnaire. More quantitative performance indicators such as an analysis of business balances can be measured for further research. The study provides evidence that is fundamental to learning orientation and firm performance. For future studies, learning orientation and other parameters or capabilities that can mediate firm performance can be sought.

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