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**ORGANIZATIONAL LEARNING AND PERFORMANCE  
RELATION: THE MEDIATING ROLE OF KNOWLEDGE  
MANAGEMENT**

Yonca Gurol (a), Tugba Karaboga (a)\*, Dilek Balak (c)

\* Corresponding author

(a) Yıldız Technical University, 34349, Istanbul, Turkey

(c) Beykent University, 34940, Istanbul, Turkey

***Abstract***

In the literature the effect of organizational learning on firm performance have been investigated in many studies and many times it has been shown that organizational learning has a significant and positive effect on firm performance. But today most of the studies investigate the effects of third variables in this relationship. In this study we focused on the mediating effect of knowledge management on the relationship between organizational learning and firm performance (financial and operational performance). In order to test our research purpose we prepared a questionnaire and conducted our survey on firms that operate in and around Istanbul. We collected 113 valid questionnaires from middle and senior managers of firms. The collected data from questionnaires were analysed with SPSS and AMOS programs. Analyses results indicated that knowledge management has a mediating effect on the relationship between organizational learning and firm performance (full mediating effect on organizational learning-operational performance relation and partial mediating effect on organizational learning-financial performance relation).

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**Keywords:** Organizational learning, Knowledge management, Financial performance, Operational performance.

## **1. Introduction**

In today's rapidly changing, turbulent and complex business environment knowledge and learning become two valuable assets for organizations in order to gain sustainability and competitive advantage. In this context knowledge management and organizational learning become two important managerial subjects both for researchers and companies. From the literature it can be understood that knowledge

management and organizational learning are two related subjects (Nafei, 2014). Knowledge management in organizations is a systemic process of knowledge creation, storage, updating, maintaining and reusing when it necessary (Turban et al., 2005; Bennet and Bennet, 2004). Similarly organizational learning is defined as knowledge acquisition, sharing and utilization (DiBella et al, 1996). Knowledge production is the result of learning at individual, group and organizational levels. Continuous learning and progression enable people to act continuously and effectively (Johannessen, Olaisen, and Olsen, 2001). With knowledge management, information that people have at individual level can be carried to group level and organization level. Hence, effective knowledge management can develop organizational learning processes and can form the basis of organizational learning in terms of knowledge identification, information processing, information evaluation and information utilization.

Organizational learning can be viewed as a vital prescriptive process used to enable organizations to grow and develop their new and improved core competencies (Jain and Moreno, 2015). The speed of organizational learning is also a source of sustainable competitive advantage for many organizations (Senge, 1990). Organizations learn new things through the human resources they possess and this process is affected either positively or negatively by the organizational learning systems they have (Argyris and Schön, 1978). A learning organization consists of four levels: individual, group, organization and inter-organizational level (Senge, 1990). Supporting and promoting organizational learning in these four levels can both improve the performance of the firm and expand knowledge management practices (Jain and Moreno, 2015).

Businesses must develop their learning abilities to maintain their competitiveness especially in today's rapidly changing, turbulent and complex business environment. In the literature there are many studies (eg. Baker and Sinkula, 1999; Bontis et al. 2002; Yeo, 2002; Khandekar, & Sharma, 2006) have shown a positive relationship between organizational learning and firm performance. But without structured knowledge management systems organizations cannot develop their organizational learning capabilities effectively (Nonaka and Takeuchi, 1995). Depending on the literature, in this study we investigated the mediating effect of knowledge management on the relationship between organizational learning and firm performance. In this context, our study begins with a literature review of variables and continues with the development of hypotheses. In the following parts of the study research methodology, data analyses, conclusion and discussions come respectively.

## **2. Literature Review and Theoretical Framework**

### **2.1. Organizational Learning**

Today, learning has become an indispensable part of everyday life and development has imposed a responsibility and obligation to learn to be effective in individuals and organizations (Khandekar and Sharma, 2006). This necessity has led them to change and seek new ways to keep organizations alive. It involves the process of orienting internal relations as well as monitoring environmental changes. In this sense, organizational learning; It has an indispensable proposition to deal with environmental changes, to maintain the organizational existence and to ensure the sustainable competitive advantage (Klimecki and Lassleben, 1999; Schein, 2004).

Organizational learning is defined as (Garvin, 1993, p. 80) the process of changing organizational behaviors or improving existing behaviors, with appropriate, accurate and consistent information and a proper perception by organizations. Organizational learning prioritizes the acquisition of knowledge, and emphasizes the role of people in the use of that knowledge. In this way, organizational learning presents an important course to performance, achievement and competitive advantages for the organizations. Organizations must attain knowledge as the source of a sustainable competitive advantage. Huber (1991) points out that organizational learning can be described as an adaptation to the changing environmental events, by flexibility and responsiveness. Organizational learning is concerned with not only collective capability but also the capacity of individuals in the organization. In this context, the lack of empirical evidences to link learning with organizational performance and learning by organizations is vital for the success of the organizations, because it is the ability of people to act together that matters for organizational performance (Khandekar and Sharma, 2006, p. 683-684).

George Huber (1991) defined organizational learning as storing knowledge in organizational memory in order to acquire, share, interpret, reuse, and evaluate knowledge when it is necessary. In other words, organizational learning is the process of information processing. Environmental changes and uncertainties that affect all decisions and behaviors within an organization have made environmental adaptation a dynamic process for the organization (Miles et al., 1978, p. 547). The most important factor to adapt environmental changes is to develop new approaches that will bring organizations' learning skills from personal to organization level (Mintzberg et al., 1998). In this context, organizational learning comes out. According to Senge (1990), learning is a dynamic concept and emphasizes the ever-changing nature of organizations. The focus on learning shifts gradually from individual learning to organizational learning. In fact, the goal of organizational learning is to integrate personal learning into organizational learning (Yeo, 2005; Xie, 2005).

## **2.2. Knowledge Management**

It has always been an important issue for businesses to know how much information they need and how to use this information effectively. In this context knowledge management become an important subject for businesses. Knowledge management is a set of organizational activities that are aimed at improving knowledge, organizational behaviours and decisions and organizational performance. Knowledge Management focuses on knowledge processes – knowledge creation, acquisition, storage, transfer, sharing and utilization. These processes support organizational processes involving innovation, individual learning, collective learning and collaborative decision making (King, 2009, p. 11).

With the emergence of information era it is understood that knowledge management is an important competitive advantage for companies. Although knowledge is a kind of resource for companies, the effective management of knowledge enables firms more efficient use of available knowledge. Also knowledge management is an important managerial function that provides a coordinating mechanism to convert company resources into capabilities (Darroch, 2005; Nelson and Winter, 1982). Especially today many firms use knowledge management systems effectively when they are taking any strategic decisions or making any long term strategic plans. Because it is understood that success of organizations depends highly on knowledge management processes (Iraz, 2005).

Whereas organizational learning puts an emphasis on the process, knowledge management focuses on the content of the knowledge that an organization acquires, processes and finally uses. The relationship between these two areas is to comprehend organizational learning as the goal of Knowledge Management. By encouraging the creation, dissemination and application of knowledge, knowledge management initiatives pay off by helping the organization surrounded knowledge into organizational processes so that it can continuously improve its practices and behaviors and pursue the achievement of its goals. From this perspective, organizational learning is one of the significant ways in which the organization can sustainably improve its use of knowledge (King, 2009, p. 5).

### **2.3. Firm Performance**

Performance is a reflection of the organization's ability to achieve long-term goals. In other words performance is a combination of resources, capabilities of the organization that are being used efficiently and effectively in order to achieve its objectives. Eventually performance is the output of the activities that occur within the organization (Nafei, 2015, p. 194). According to Venkatraman and Ramanujam (1986) measuring performance is necessary to observe progress in the competitive system but there is no consensus on how to measure performance, which phases have to be passed and which criteria are to be based on. Porter (1980) states that good performance is related to being able to earn over the average for a year.

In the literature there are many performance indicators such as growth, market share, profitability (Lumpkin and Dess, 1996); turnover of assets, increase in sales, increase in exports (Zahra and Garvis, 2000); financial performance, organizational efficiency, business performance (Venkatraman and Ramanujam, 1986), and innovation performance (Alegre and Chiva, 2008). In researches generally subjective measurement methods depends on subjective performance perceptions of employees are used because of the difficulty of reaching quantitative and definite data of firms (Akman et al., 2008, Usta, 2011). In this context, in our work we used subjective measurement methods based on subjective perceptions of managers to measure financial and non-financial performance criteria. Among the variables we use are market share, profitability, increase in sales, employee productivity, job satisfaction, service quality, product quality, customer satisfaction and innovation.

### **2.4. Hypotheses Development**

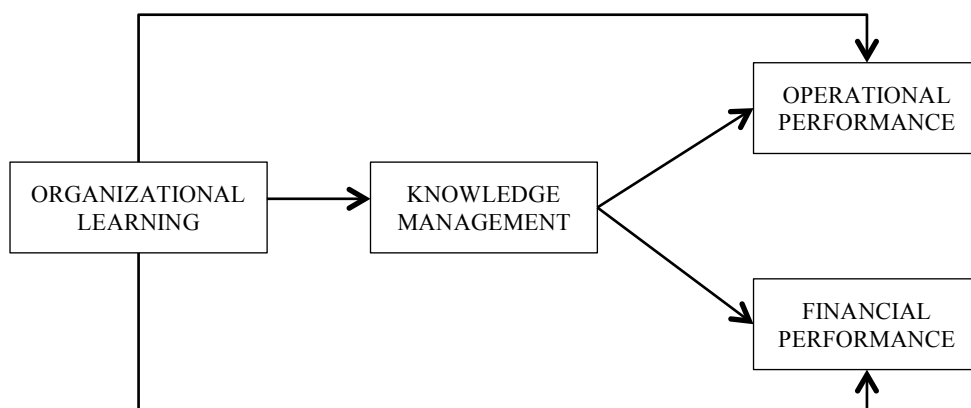
From the literature it can be understood that knowledge management and organizational learning are two related subjects (Nafei, 2014). Knowledge management in organizations is a systemic process of knowledge creation, storage, updating, maintaining and reusing when it necessary (Turban et al., 2005; Bennet and Bennet, 2004). Similarly organizational learning is defined as knowledge acquisition, sharing and utilization (DiBella et al, 1996). Jerez-Gomez et al. (2005) states that knowledge is a key strategic resource for organizational learning. On the other hand organizational learning is seen as a dynamic process based on knowledge and within this process knowledge moves from individual to group level or from group to organizational level (Huber, 1991; Crossan, Lane, and White, 1999). Hence, without knowledge management organizations cannot develop personal or group level learning abilities (Garratt, 1990).

Knowledge production is the result of learning at individual, group and organizational levels. Continuous learning and progression enable people to act continuously and effectively (Johannessen, Olaisen, and Olsen, 2001). With knowledge management, information that people have at individual level can be carried to group level and organization level. Hence, effective knowledge management can develop organizational learning processes and can form the basis of organizational learning in terms of knowledge identification, information processing, information evaluation and information utilization. If businesses learn how to manage information, they can perform organizational learning faster than their competitors, which provides them sustainable competitive advantage and higher organizational performance as the fastest learning organizations.

In today's uncertain, turbulent environment businesses must develop their learning abilities to maintain their competitiveness. In the literature there are many studies (eg. Baker and Sinkula, 1999; Bontis et al. 2002; Yeo, 2002; Khandekar ve Sharma, 2006) have shown a positive relationship between organizational learning and firm performance. But without structured knowledge organizations cannot develop their organizational learning capabilities effectively (Nonaka and Takeuchi, 1995). In this context, depending on the literature we argue that organizational learning increase firm performance through knowledge management and we propose the following hypotheses:

*H1: Knowledge management mediates the relationship between organizational learning and financial performance.*

*H2: Knowledge management mediates the relationship between organizational learning and operational performance.*



**Figure 01.** Conceptual Research Model

### 3. Research Method

#### 3.1. Sample and Data Collection

In this study survey method was used to collect data. Research data were collected from large and medium sized firms that operate in and around Istanbul. We collected 113 valid questionnaires from middle and senior managerial positions of these firms via email or face to face. Data obtained from those 113 questionnaires were analysed with SPSS and AMOS programs and hypotheses were tested through path analysis.

### 3.2. Measures

To measure relations between variables we prepared a questionnaire depending on the scales that used in previous studies. All items in the survey were arranged according to 5 likert-type scale (1 “totally disagree”, 5 “totally agree”). To measure organizational learning we used 4 items scale developed by Aragon et al. (2007) and Garcia-Morales et al. (2007). Confirmatory factor analysis results validated the scale ( $\chi^2 = 0.907$ , GFI = 0.996 , AGFI = 0.979 , NFI = 0.979 , RFI = 0.976) and showed that the scale is unidimensional and its validity and reliability is adequate ( $\alpha = 0.772$ ).

To measure knowledge management we used 4 items scale developed by Gold et al. (2001). Confirmatory factor analysis results validated the scale ( $\chi^2 = 0.835$ , GFI = 0.996 , AGFI = 0.962 , NFI = 0.996 , RFI = 0.977) and showed that the scale is unidimensional and its validity and reliability is adequate ( $\alpha = 0.837$ ).

We measured organizational performance in two dimensions: financial performance and operational performance (non-financial performance). To measure firm performance we used 3 items financial performance scale adapted from Venkatraman and Ramanujam (1986) and 6 items operational performance scale adapted from Arthur (1994) and Ichniowski et al. (1997). Confirmatory factor analysis results validated the scale ( $\chi^2 = 1.544$  , GFI = 0.935 , AGFI = 0.878 , NFI = 0.937 , RFI = 0.906 , RMSEA = 0.070) and showed that the scale has two dimensions and its validity and reliability is adequate ( $\alpha = 0.90$ ).

## 4. Findings

### 4.1. Factor and Correlation Analyses

Dimensions of the measured variables were understood with exploratory factor analysis by using principal component analyses extraction method with equamax rotation. According to analyses results KMO value is 0,809 and Barlett test result is significant at 0.001 levels. This shows that our data set is adequate for factor analysis. As it is seen in the table below factor loadings took values between 0,659 and 0,884. Factor reliabilities were checked with Cronbach's Alpha values and all values were found greater than 0.70 as it can be seen in Table 02.

**Table 01.** Factor Analysis Results

	Organizational Learning	Knowledge Management	Operational Performance	Financial Performance
Newly learned information about business fields in the last three years	,808			
Business performance has been influenced by newly acquired information over the last three years	,799			
Acquired critical capabilities of employees over the last three years	,783			
Our business is a learning organization.	,689			
Processes that allow to exchange information with business partners		,884		
Processes that can learn about business partners		,875		
Processes that will transform competitive thinking into action plans		,789		

Processes to integrate different kinds of information and resources	,727			
Customer satisfaction	,847			
Service quality	,811			
Employee productivity	,754			
Job satisfaction	,747			
Product quality	,706			
Innovation	,659			
Increase in sales	,870			
Increase in profitability	,827			
Market share	,785			
Eigen Values	1,163	1,476	6,519	2,041
Variance Explained	15,795	16,407	21,182	16,607
	48	45	83	72

Notes: (i) Principal Component Analysis with Equamax Rotation  
 (ii) KMO =0,809 Bartlett Test;  $p < 0.001$   
 (iii) Total Variance Explained (%); 69,993

**Table 02.** Correlation Analysis

	1	2	3	4	Mean	Std. Dev.
Organizational Learning	(0,77)				4,142	0,482
Knowledge Management	,494**	(0,84)			4,018	0,587
Operational Performance	,374**	,527**	(0,89)		3,923	0,615
Financial Performance	,352**	,367**	,601**	(0,84)	3,792	0,760

\*\* . Correlation is significant at the 0.01 level (2-tailed). Cronbach's Alpha( )is represented in diagonals

#### 4.1. Test of the Research Model

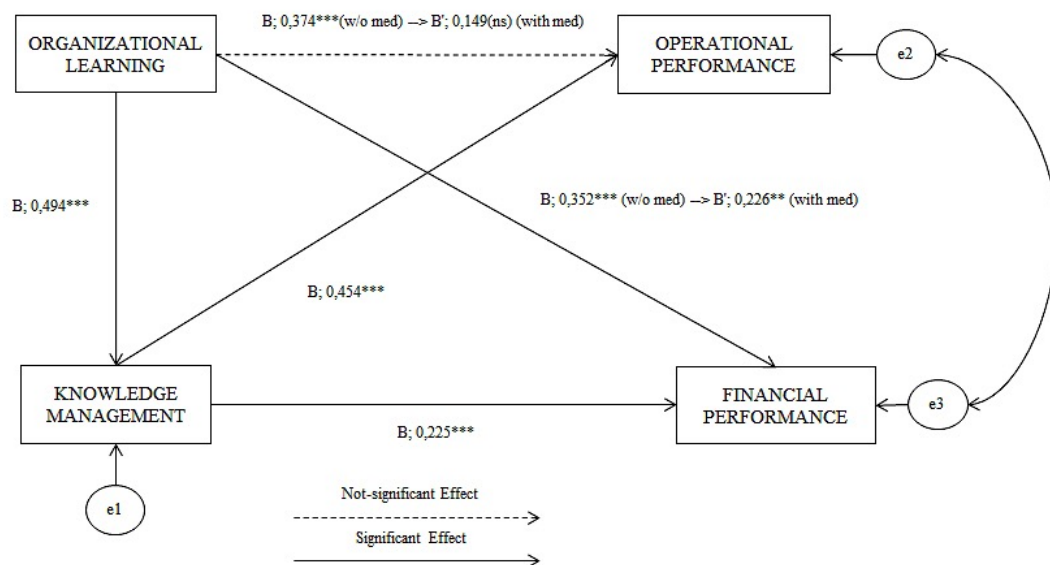
Depending on the structural equation modelling research hypotheses were tested with path analysis technique. The results of the path analysis are shown below.

**Table 03.** Hypothesis Testing

IV	DV	Standardized Estimates	Indirect Effect Estimate
Model w/o Mediator	Organizational Learning —> Operational Performance	0,374** *	
Model with Mediator	Organizational Learning —> Financial Performance	0,352** *	
Model w/o Mediator	Knowledge Management —> Operational Performance	0,454** *	
Model with Mediator	Knowledge Management —> Financial Performance	0,255**	
Model w/o Mediator	Organizational Learning —> Knowledge Management	0,494** *	
Model with Mediator	Organizational Learning —> Financial Performance	0,226**	0,126**
Model w/o Mediator	Organizational Learning —> Operational Performance	0,149(n s)	0,224**

\*\*\*p<0.001, \*\*p<0.05, a; 5000 Bootstrap Samples

In this study, in order to test mediating effect we used Bootstrapping method at 5000 sample level. It is a non-parametric method depends on resampling many times with replacement and it is one the mostly proffered method of testing indirect effect when sample size is insufficient (Preacher and Hayes, 2004; Shrout and Bolger, 2002). According to the path analysis results above table, before taking knowledge management as a mediator it is seen that organizational learning has a positive and significant effect on both financial performance ( $\beta = 0,352$ ;  $p < 0,001$ ) and operational performance ( $\beta = 0,374$ ;  $p < 0,001$ ). After including knowledge management as a mediating variable to the analysis it is shown that the significant effect of organizational learning on operational performance disappeared and the significant effect of organizational learning on financial performance decreased ( $\beta = 0,226$ ;  $p < 0,05$ ). Depending on the Baron and Kenny (1986) knowledge management has a full mediation effect on the relation between organizational learning and operational performance and partial mediation effect on relation between organizational learning and financial performance. This shows that our research hypotheses H1 and H2 are supported. Path model results are shown in the figure below.



**Figure 02.** Path Analyses Results ( $***p < 0.001$ ,  $**p < 0.05$ )

## 5. Conclusion and Discussions

In the literature some studies (eg. Baker and Sinkula, 1999; Bontis et al. 2002; Yeo, 2002; Khandekar, & Sharma, 2006) have shown a positive relationship between organizational learning and firm performance and in some studies (Teece, 1998; Darroch, 2005) it has been shown that knowledge management is positively related to firm performance. In this study we brought together two related variables –knowledge management and organizational learning- and investigated the mediation effect of knowledge management on the relation between organizational learning and firm performance. According to analyses results knowledge management has a full mediation effect on the relation between organizational learning and operational performance and partial mediation effect on relation between organizational learning and financial performance. This study contributes literature by showing the importance of knowledge management on the organizational learning – performance relation. With the



effective knowledge management systems firms can improve organizational learning capabilities and perform better than their rivals. In the competitive business environment firms should increase interest in knowledge management and related systems to derive new information from existing know how and to process existing knowledge more efficiently. Therefore they can contribute their learning capabilities and learning processes. As a result they will achieve higher organizational performance especially higher operational performance. This two way interaction deserves more interest and future researches can focus on it.

This study has some limitations. First of all we conducted our survey on firms that operate in and around Istanbul. Further researchers can collect data from all over Turkey and other countries for the generalizability of results. Also we used subjective performance measures depending on subjective perceptions of managers. Further researchers can focus on objective performance measures which are more reliable and precise.

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