



International Journal of Tourism, Economic and Business Sciences
Uluslararası Turizm, Ekonomi ve İşletme Bilimleri Dergisi
E-ISSN: 2602-4411, 1 (1): 48-55, 2017, www.nobel.gen.tr

ABSORPTIVE CAPACITY: AN EMPIRICAL STUDY ON TURKEY'S HOTEL COMPANIES*

Emine KALE¹ Özlem BAŞAR² Ahmet AKNAR³

¹Nevşehir Hacı Bektas Veli University, Tourism Faculty, Nevşehir, Turkey

²Nevşehir Hacı Bektas Veli University, Urgup Sebhat ve Erol Toksoz Vocational School Tourism Vocational School Nevşehir, Turkey

³Hitit University, Social Sciences Vocational School, Çorum, TURKEY

*This article was presented at the 1st International Congress on Tourism, Economic and Business Sciences (01-05 November 2017- Skopje)

*Corresponding author:
E-mail: ekale@nevsehir.edu.tr

Received: 01.11.2017
Accepted: 27.12.2017

Abstract

Absorptive capacity plays a key role in determining a firm's capability to access and make use of external knowledge. It also refers to the ability to locate new ideas and to incorporate them into an organization's processes, and this is widely seen as a major contributor to organizational performance. It includes organizational routines and strategic processes by which a firm acquires, assimilates, transforms, and exploits knowledge. In this study, absorptive capacity was examined in terms of hotel operations in Turkey. The study aimed at uncovering the effects of the dimensions of absorptive capacity (acquire, assimilate, transform, exploit) on firm performance and determining if there was a difference in the dimensions of absorptive capacity according to the hotel's star and hotel age. Data were collected using a questionnaire and 124 applicable questionnaires were gathered at the end of the study. According to results of regression analysis, it was found that the dimensions of acquire, assimilate and adoption of absorptive capacity had a significant effect on firm performance. In contrast to expectations, no significant effect of the transform dimension of absorptive on firm performance was determined. Anova analysis was used to determine whether if there was a difference in the dimensions of absorptive capacity according to the hotel's star and hotel age. According to the analysis results, no difference was detected.

Keywords: Absorptive Capacity, Hotel Companies, Firm Performance

Özet

Özümseme kapasitesi, bir işletmenin dış bilgiye erişme ve bunlardan yararlanma yeteneklerini belirlemede önemli bir rol oynamaktadır. Aynı zamanda, yeni fikirleri bulma ve bunları bir organizasyonun süreçlerine dâhil etme kabiliyetine işaret etmekte ve örgütsel performansa büyük katkı sağlayıcı olarak görülmektedir. Bir firmanın dışsal bilgiyi edinmesi, benimsemesi, dönüştürmesi ve kullanması için örgütsel rutinleri ve stratejik süreçleri içermektedir. Bu çalışmada özümseme kapasitesi, Türkiye otel işletmeciliği açısından incelenmiştir. Çalışma, özümseme kapasitesinin boyutlarının (edinme, benimseme, dönüştürme ve kullanma) firma performansı üzerindeki etkilerinin ortaya çıkarılmasını ve otelin yıldızı ve yaşına göre özümseme kapasite boyutlarında bir farklılık olup olmadığını saptamayı amaçlamaktadır. Veriler, anket tekniği kullanılarak toplanmış ve çalışma sonunda 124 kullanılabilir anket formu elde edilmiştir. Regresyon analizinin sonuçlarına göre, özümseme kapasitesinin edinme, benimseme ve kullanma boyutlarının, firma performansı üzerinde belirgin bir etkisi olduğu bulunmuştur. Beklentilerin aksine, özümseme kapasitesinin dönüşüm boyutunun firma performansı üzerinde önemli bir etkisi tespit edilememiştir. Otelin yıldızı ve otel yaşına göre özümseme kapasitenin boyutlarında bir farklılık olup olmadığının belirlenmesi için Anova analizi kullanılmıştır. Analiz sonuçlarına göre, özümseme kapasitesi boyutlarında hiçbir fark tespit edilmemiştir.

Anahtar Kelimeler: Özümseme Kapasitesi, Otel İşletmeleri, Firma Performansı

INTRODUCTION

Today, businesses are facing the rapidly changing and increasingly complex external environment (O'Connor, 2008). For businesses to better respond to such dynamic complexities and maintain

their lives, external knowledge must be used for business benefit (Lane & Lubatkin, 1998). The absorptive capacity (Lane, Koka & Pathak, 2006), which allows companies to select, measure, analyze, understand and imagine external knowledge determinations, requires firms to carefully select customers, identify their needs, develop specific products according to their needs and communicate more with customers value contributes to the customer's commitment and satisfaction (Tzokas, Kim, Akbar, & Dajan, 2015).

Absorptive capacity relates to the ability of a firm to acquire external knowledge, adapt it, and achieve a commercial result (Cohen and Levinthal, 1990: p. 128). Zahra and George (2002) view absorptive capacity as a dynamic ability that influences the nature and sustainability of the firm's competitive advantage. It has been determined that assimilation capacity is a significant contribution to organizational performance (García-Morales, Ruiz-Moreno, & Llorens-Montes, 2007; Bolívar-Ramos, García-Morales, & Martín-Rojas, 2013, financial performance (Bergh & Lim, 2008; Lichtenthaler, 2016) and overall performance of the company (Flatten, Engelen, Zahra, & Brettel 2011; Tzokas, Kim, Akbar & Dajan, 2015) in the study of the topic.

When the literature is examined, it has been found that the absorptive capacity is not investigated much in terms of tourism sector. It is seen that tourism enterprises are dependent on external sources of information (Thomas and Wood, 2015), as the uncertainty in the tourism sector, the competition between businesses is intense, and customer demands change. Examination of the acquisition, adoption, transformation and exploitation of external information, ie, the absorptive capacity of businesses, will guide tourism operations seeking to gain competitive advantage. In this study, the effects of absorptive capacity and absorptive capacity on firm performance are examined in terms of hotel operations.

LITERATURE REVIEW

Cohen and Levinthal (1989: p. 569) claimed that R&D departments developed not only new information in companies but also the ability to acquisition, adoption and exploitation the information the company is translating into, which is also referred to as absorptive capacity. Kim (1998: p. 507) stated that absorptive capacity requires learning ability and improved problem solving skills. Zahra and George (2002: p. 186) defined the concept of absorptive capacity as "acquisitions, assimilation, transformation, and exploitation, organizational programs and processes" for firms to produce a dynamic organizational capability. They also added a fourth dimension to the three-dimensional absorptive capacity in previous studies (Cohen & Levinthal, 1989), indicating that these four abilities represent four dimensions of absorptive capacity. For them, the degree of external acquisition and adoption reflects the potential capacity of the firm. The extent of transformation, and exploitation is related to the realized absorptive capacity and reflects the ability of the firm to use the absorbed knowledge. Potential and realized absorptive capacities have different but complementary roles. Potential absorptive capacity alone does not affect performance enhancement. Realized absorptive capacity involves using the adopted knowledge in firm activities and thereby improving its performance (Zahra & George, 2002: p.191). The dimensions of absorptive capacity can be specified as follows.

Acquisition: Acquisition refers to the ability of a firm to identify and acquire external knowledge about itself from all the information surrounding it (Fosfuri & Tribo, 2006). There are three characteristics that can be influenced by the effort absorbed in the information acquisition process: density, speed and direction. The intensity and speed of a company's ability to identify and collect information can determine the quality of its acquisition capabilities (Zahra & George, 2002: p. 189).

Assimilation: Assimilation deals with processes and programs that analyze, process, interpret and understand the information obtained from external sources (Fosfuri & Tribo, 2006).

Transformation: Transformation refers to the ability to change, adapt and combine external information from external sources with existing and internally generated information (Fosfuri & Tribo, 2006). The transformation shows the ability of a firm to develop and refine routines that make it easier to combine existing information and transformed and assimilated newly acquired information (Zahra & George, 2002).

Exploitation: Exploitation refers to the daily work-based organizational skills that enable firms

to refine, expand and enhance their existing skills, or to create new knowledge and innovations and to use them in their activities (Zahra & George, 2002, Fosfuri & Tribo, 2006).

There are many studies in the literature that have shown a positive effect of absorptive capacity on firm and innovation performance. Stock, Greis, and Fischer, (2001) investigated the relationship between absorptive capacity and new product development performance in their work. According to their study, absorption capacity and new product development performance are positively related, but only to a certain level. Beyond this turning point, higher absorptive capacity is associated with lower levels of new product development performance. Similarly, Lichtenthaler (2016) found an inverse U-shaped relationship between absorption capacity and financial performance of the firm. That is, the absorption capacity increases the firm's financial performance to some extent and after a certain point it has a negative effect on the financial performance. Kotabe, Jiang, and Murray (2011) have reached the conclusion that the realized absorptive capacity interacts with information acquisition and increases the performance of the new product market. Yilmaz (2013) concluded that the absorptive capacity is influenced positively on all dimensions of business performance (operational performance, commercial performance, financial performance), but the greatest effect is on financial performance. Fosfuri and Tribó (2006) noted that potential absorptive capacity is a source of competitive advantage in innovation, particularly in the presence of an efficient internal information flow that helps to reduce the distance between potential and realized capacity. Harvey et al. (2010) developed a model in which internal and external conditions together influence the absorptive capacity, and consequently absorptive capacity increases the performance of the operator. It has also been found that the absorptive capacity increases firm performance in SMEs' studies (Flatten et al 2011; Tzokas et al., 2015)

The absorption capacity has been underestimated in the tourism sector. Valentina and Passiante (2009) investigate the impact of the ability of assimilation on value creation on 129 small and medium-sized tourism enterprises participating in tourism network systems. In their study, the authors described the three main components of absorptive capacity as gaining and releasing resources, communication culture and structure, and scanning the environment. The end result of the work is that the value creation of enterprises participating in networks is influenced by the operator's absorptive capacity and at the same time is a function of this capability. This study found that three components of absorptive capacity accounted for 81% of firms' change in value creation capacity. In their study of Thomas and Wood (2014) about the absorptive capacity in the hospitality industry, have modeled an absorptive capacity for tourism enterprises and reorganized the concepts of potential and realized absorptive capacities as given by Zahra and George (2002) as acquisition and use.

METHOD

The purpose of this study is to assess absorptive capacity in terms of hotel operations, to determine the effect of absorptive capacity on business performance, and to determine whether absorptive capacity differs in terms of the characteristics of hotel operations.

The universe of the research is the star hotel establishment in Turkey. Survey technique was used to collect research data. An electronic questionnaire form was sent to approximately 1500 e-mail addresses from an internet site where the hotel's contact addresses are located, from May to July 2017. The rate at which the mails arrive at the buyer is very small (30%) when the feedback is examined. At the end of the research 124 available surveys were obtained.

To measure the absorption capacity in the study, Flatten et al. (2011) and adapted to Turkish by Yilmaz (2013). The questionnaire used a five-point likert scale (1: never, 5: always). The reliability of your scale was found to be Cronbach's Alpha = 0.81.

In the study, the firm performance was measured and the 7 item scale of Zerenler (2005) study was used. In the performance of the firm, the questions were created to be compared with the competitors and the five-point Likert scale was used (in comparison with the competitors in the last three years ... level 1: very low, 5: very high). The reliability of the scale was found to be Cronbach's Alpha = 0.95.

In preparing the questionnaire and evaluating the clarity of the statements, the experts of the subject and the opinions of entrepreneurs in the sector benefited from it. A pilot study of 20 people was

conducted and corrections were made to increase the clarity of the questions.

In the analysis of the data; a correlation analysis for the understanding of interrelationships between variables, a regression analysis by measuring the effects of assimilation capacities on firm performance, a measurement of whether the absorptive capacity according to hotel star and years of service differ or not Anova was used.

FINDINGS

Table 1 contains demographic characteristics of the participants and information on their operations. When the ages of the participants are examined; most of them are between the ages of 31-40. 75% of the respondents are men, 25% are females. Participants are married, associate degree graduates, tourism educated majority. 35% of the participants are general managers, 38% are department managers. 56.5% of the participants have been working in the sector for more than 13 years. When the study period of the hotel is examined, it is seen that 30,6% have been working in the same hotel for 1-3 years. It is possible to say that the rate of occupation turnover is high in tourism sector and management level.

When the characteristics of the surveyed hotels are examined, it is seen that 37% of them are 4-star hotels and 38.7% of them have been serving for 5 years at most.

Confirmatory factor analysis was used to determine the validity and dimensions of the scales used in the research. In this context, the scales are subject to separate DFA analysis. The Acquisition dimension of 3 items, the Assimilation dimension of 4 items, the Transformation dimension of 4 items, the Exploitation dimension of 3 items that the absorption capacity is four dimensions were verified originally. ($X^2 / dF = 1.63$ GFI = 902; IFI = 970; CFI = 969; NFI = 926; RMSEA = 0.72) The company performance scale was also confirmed to be the only factor ; GFI = 941; IFI = 966; CFI = 966; NFI = 951; RMSEA = 0.78).

Table 1: Demographic Characteristics of Participants and Information for Operation (N: 124)

Variables	F	(%)	Variables	F	(%)
Age			Working period at the hotel		
30 years old and below	25	20,1	Shorter than 1	13	10,5
Between 31 and 40 years old	57	56,0	Between 1 and 3 years	38	30,6
Between 41 and 50years old	31	25,0	Between 4 and 6years	24	19,4
51 years old and above	11	8,9	Between 7 and 9years	14	11,3
			Between 10 and 12 years	19	15,3
			13 years and longer	16	12,9
Sex			Working period in the industry		
Female	31	25	Shorter than 3 years	9	7,3
Male	93	75	Between 4 and 6 years	13	10,5
Marital Status			Between 7 and 9 years	20	16,1
Single	43	34,7	Between 10 and 12 years	12	9,7
Married	81	65,3	13 years and longer	70	56,5
Education			Star of the Hotel		
Primary school	2	1,6	1-star	9	7,3
High school	23	18,5	2-star	12	9,7
Associate degree	49	39,5	3-star	24	19,4
Bachelor's degree	34	27,4	4-star	46	37,1
Master degree	16	12,9	5-star	33	26,6
Tourism Education			Service Year of the Hotel		
I did not receive	45	36,3	Shorter than 5 years	48	38,7
I received it at the high school level	13	10,5	Between 6 and 10 years	24	19,4
I received it at the associate degree level			Between 11 and 15years	13	10,5
I received it at the university level	29	23,4	Between 16 and 20 years	16	12,9
I received it at the master degree level	33	26,6	21 years and longer	23	18,5
	4	3,2			
Position at the Hotel					
General Manager	43	34,7			
Vice General Manager	5	4,0			
Department Manager	47	37,9			
Vice Department Manager	3	2,5			
Department Chief	26	20,9			

Correlation analysis was used to determine the relationship between the extent of absorption capacity and firm performance. Table 2 shows the mean, reliability, and correlation analysis results for the variables of the study. When the reliability of the scales used are examined; alpha values varied between 0.84 and 0.94. These values exceeded the 0.60 limit, which is considered to be the lowest limit, resulting in the reliability of the scales. When we look at the correlation results for variables, there is a positive relationship between all dimensions of absorptive capacity (Acquisition, Assimilation, Transformation, Exploitation) and firm performance. In other words, each of the processes of acquiring, adopting, transforming and exploiting knowledge is significantly related to the enhancement of firm performance.

Table 2: Correlation Analysis Results Regarding Variables

	Mean	Std. D.	1	2	3	4	5
1- Acquisition	3.77	0.91	(0,84)				
2- Assimilation	4.04	0.89	.658**	(0.89)			
3- Transformation	3.83	0.92	.574**	.768**	(0.92)		
4- Exploitation	3.89	1.04	.535**	.742**	.756**	(0.94)	
5-Firm Performance	3.71	0.85	.529**	.609**	.549**	583**	(0.91)

** $p < 0.01$ (two-way)

The dimensions of absorption capacity were included in the regression model together and multiple regression analysis was performed. The results are shown in Table 3. First, collinearity was observed to determine if there was a multiple linear connectivity problem between dimensions, and there was no multiple connection problem between the independent variables (Tolerance > .2, VIF < 10). When dimensions are included in the model, it has been found that the acquisition, assimilation and exploitation dimensions have a significant effect on firm performance, while the transformation dimension has no significant effect. According to this finding, the ability of the firm to adapt the information obtained from the outside to the business and combine it with the existing information has no significant effect on the firm performance.

Table 3: Effect of Absorptive Capacity on Firm Performance: Results of Regression Analysis

Independent Variables	B	β	t	p	Tolerance	VIF
Constant	1.436		5.730	.000		
1- Acquisition	.160	.200	2.154*	.033	.555	1.802
2- Assimilation	.208	.253	2.012*	.046	.300	3.333
3- Transformation	.042	.053	.437	.663	.329	3.038
4- Exploitation	.174	.248	2.174*	.032	.365	2.742
R			.658			
R²			.434			
Adjusted R²			.415			
F			22.775			
Sig.			.000			

Dependent Variable: Firm Performance

A one-way ANOVA test was conducted to determine if there is a difference in the size of absorptive capacity according to the characteristics of the hotel operations (star and service year (age)). Contrary to expectations, no significant difference was found between the absorptive dimensions and the

hotel star and service years ($p > 0,05$).

Table 4: Differences in Sizes of Absorptive Capacity by Hotel Star and Age

By Star of the Hotel		Sum of Squares	df	Mean Square	F	Sig.
Acquisition	Between Groups	5.073	4	1.268	1.560	.189
	Within Groups	96.714	119	.813		
	Total	101.787	123			
Assimilation	Between Groups	.951	4	.238	.294	.882
	Within Groups	96.308	119	.809		
	Total	97.259	123			
Transformation	Between Groups	.359	4	.090	.103	.981
	Within Groups	104.056	119	.874		
	Total	104.415	123			
Exploitation	Between Groups	1.671	4	.418	.376	.825
	Within Groups	132.204	119	1.111		
	Total	133.875	123			
By Age of the Hotel		Sum of Squares	df	Mean Square	F	Sig.
Acquisition	Between Groups	2.125	4	.531	.634	.639
	Within Groups	99.662	119	.837		
	Total	101.787	123			
Assimilation	Between Groups	1.870	4	.467	.583	.675
	Within Groups	95.390	119	.802		
	Total	97.259	123			
Transformation	Between Groups	4.031	4	1.008	1.195	.317
	Within Groups	100.384	119	.844		
	Total	104.415	123			
Exploitation	Between Groups	3.534	4	.884	.807	.523
	Within Groups	130.341	119	1.095		
	Total	133.875	123			

DISCUSSION AND CONCLUSION

Increasing competition in the tourism sector and rapid changes in customer preferences and demands are also increasing the importance of rapidly processing market information. Absorptive capacity helps companies to carefully select customers, identify their needs, develop customized products according to their needs, and thereby improve firm performance by enabling firms to determine, acquire, analyze, understand, and implement creative outcomes. In this study, the absorptive capacity in terms of hotel management and the effect on firm performance were evaluated.

As a result of the research, all dimensions of absorptive capacity (Acquisition, Assimilation, Transformation, Exploitation) were positively correlated with firm performance. This finding is in line with previous studies (García-Morales et al., 2007; Flatten et al., 2011)

The effect of the size of the absorptive capacity on firm performance was tested by regression analysis. According to the results of the analysis, it was seen that the acquisition, assimilation and exploitation dimensions had a significant effect on firm performance and the transformation dimension had

no significant effect. The findings of this study are unexpectedly different when the realized absorptive capacity (transformation and exploitation) is more influential in firm performance than the potential absorption capacity (acquisition and assimilation) (Zahra and George, 2002). In studies in the literature, a significant effect of absorptive capacity on innovation and firm performance has been determined (Stock et al., 2001, Flatten et al., 2011, Tzokas et al., 2015, Lichtenthaler, 2016). In a study in Turkey (Yılmaz, 2013), it has been found that absorptive capacity is effective on all dimensions of business performance (operational performance, commercial performance, financial performance) positively.

It has been determined that the absorptive capacity of the hotels does not differ according to their star and the service year of the operator. The results of this study are consistent with some studies in the literature (Kotabe et al., 2011; Yılmaz, 2013). Studies show that absorptive capacity is also very important in terms of young and small businesses, and even that these firms are more dependent on outsourcing for information (Gupta et al., 2006, Thérin, 2007, Flatten et al. 2011).

This research is concerned with examining the absorptive capacity of hotel enterprises and determining its effect on firm performance. In hotel operations, the acquisition of information from external sources, the analysis of this information and the effective use thereof increase the business performance. In future research, intra-organizational factors that influence absorptive capacity at the venues may be addressed in order to more effectively utilize absorptive capacity.

REFERENCES

- Bergh, D. D. and Lim, E. N. (2008). Learning how to restructure: Absorptive capacity and improvisational views of restructuring actions and performance. *Strategic Management Journal*, 29(6), 593-616.
- Bolívar-Ramos, M. T.; García-Morales, V. J. and Martín-Rojas, R. (2013) The effects of information technology on absorptive capacity and organisational performance, *Technology Analysis & Strategic Management*, 25:8, 905-922,
- Cohen, W. M., and Levinthal, D. A. (1989). Innovation and learning: The two faces of R&D. *The Economic Journal*, 99(397), 569–596.
- Cohen, W. M., and Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152.
- Flatten, T. C.; Engelen, A.; Zahra, S. A. and Brettel, M. (2011). A measure of absorptive capacity: Scale development and validation. *European Management Journal*, 29(2), 98-116.
- Fosfuri, A. and Tribó, J.A. (2006). Exploring the antecedents of potential absorptive capacity and its impact on innovation performance. *Omega*, 36(2), 173-187.
- García-Morales, V. J.; Ruiz-Moreno, A. and Llorens-Montes, F. J. (2007). Effects of technology absorptive capacity and technology proactivity on organizational learning, innovation and performance: an empirical examination, *Technology Analysis & Strategic Management*, 19(4), 527-558.
- Gupta, A., K. Smith and C. Shalley, (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, 49, 693–706.
- Harvey, G.; Skelcher, C.; Spencer, E.; Jas, P. and Walshe K. (2010). Absorptive Capacity in a non-market environment: A knowledge-based approach to analysing the performance of sector organizations. *Public Management Review*, 12(1), 77-97.
- Kotabe, M.; Jiang, C. X. and Murray, J. Y. (2011). Managerial ties, knowledge acquisition, realized absorptive capacity and new product market performance of emerging multinational companies: A case of China. *Journal of World Business*, 46(2), 166-176.
- Kim, L. (1998). Crisis construction and organizational learning: Capability building in catching-up at Hyundai Motor. *Organization Science*, 9(4), 506-521.
- Lane, P. J., Koka, B. R. and Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833–863.
- Lane, O. J. and Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19(1), 45-62.

tegic Management Journal, 19(5), 461–477.

Lichtenthaler, U. (2016). Absorptive capacity and firm performance: an integrative framework of benefits and downsides, *Technology Analysis & Strategic Management*, 28(6), 664-676.

O'Connor, G. C. (2008). Major innovation as a dynamic capability: A systems approach. *Journal of Product Innovation Management*, 25(4), 313–330.

Park, G. and Kang, J. (2009). The effects of teacher firms' characteristics and student firms' absorptive capacity on firm performance in technology alliances. *International Journal of Innovation Management*, 13(3), 393-409.

Rebolledo, C.; Halley, A. and Nagati, H. (2009). The effects of absorptive capacity on operational performance within the context of customer-supplier relationships. *Supply Chain Forum an International Journal*, 10(2), 52-62.

Stock, G., Greis, N. And Fischer, W. (2001). Absorptive capacity and new product development. *Journal of High Technology Management Research*, 12(1), 77.

Thérin, F. (2007). Absorptive capacity: An empirical test of Zahra and George's contribution in small business settings. *Gestion 2000*, 4, 17-29

Thomas, R. and Wood, E. (2014). Innovation in tourism: Re-conceptualising and measuring the absorptive capacity of the hotel sector. *Tourism Management*, 45, 39-48.

Thomas, R. and Wood, E. (2015). The absorptive capacity of tourism organisations, *Annals of Tourism Research*, 54, 84–99.

Tzokas, N.; Kim Y. A.; Akbar H. and Dajan, H. (2015) Absorptive capacity and performance: The role of customer relationship and technological capabilities in high-tech SMEs. *Industrial Marketing Management*, 47, 134-142.

Valentina, N and Passiante, G. (2009) Impacts of absorptive capacity on value creation, *Anatolia*, 20(2), 269-287.

Yılmaz, A. (2013). Absorptive capacity and firm performance: A research in ESO, Unpublished Doctoral Dissertation, Anadolu University Social Sciences Institute, Eskişehir

Zahra, S. A., and George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185–203.

Zerenler, M. (2005). The performance measurement system design and a study on performance measurement of manufacturing systems, *The International Journal of Economic and Social Research*, 1, 1-36.