



www.turkishstudies.net/social

**Turkish Studies - Social Sciences**

eISSN: 2667-5617

*Research Article / Araştırma Makalesi*



INTERNATIONAL  
BALKAN  
UNIVERSITY

Sponsored by IBU

## **Examining The Effects of Dynamic Capabilities and Knowledge Acquisition on Innovation and New Product Performance**

*Dinamik Yetenekler ve Bilgi Edinmenin İnovasyon Performansı ve Yeni Ürün Performansı Üzerindeki Etkisinin İncelenmesi*

Kudret Celtekliligil\* - Zafer Adiguzel\*\*

**Abstract:** In today's world, national borders have become more flexible and permeable, with businesses realizing that their most important source of profit is their ability to constantly present differences to their markets. And, in fact, innovations emerge as a product or a service is shaped by the knowledge and capabilities of the company as they adapt to changing environmental conditions. In other words, product variety and company capabilities develop together to adapt to the changing environment since the dynamic nature of organizations can provide an advantage in developing new products. However, information obtained from the environment may also have an effect. For this reason, if dynamic capabilities are supported with knowledge, creative activities may increase and innovation performance can be positively affected. So, in order to be successful in innovation, organizations need to be able to use knowledge as well as dynamic capabilities. This research was carried out in the automobile industry (automobile spare parts producing companies), specifically due to their dynamic structure in 2019. Questionnaires were collected from 375 engineers. Analyzes were made using the SPSS 25 program. Since the survey method was on a 5-point Likert scale, correlation and regression analysis were performed after factor and reliability analyzes were performed. The Sobel Test and Hayes Process tool were performed to analyze the effect of the mediation variable. As a result of the study, it was concluded that the dynamic capabilities and knowledge acquisition of the companies in the manufacturing sector did not sufficiently affect the product performance in an environment with high competition. This may be because competitors are more successful in competition and are preferred in terms of product performance. It will be important in terms of contributing to the literature that future studies should be conducted in technology and R&D focused companies to acquire dynamic capabilities and knowledge acquisition.

**Structured Abstract:** Augier and Teece (2007) suggest in their research that a coherent framework should be established on how the concept of dynamic capabilities should be developed in order for firms to turn it into a sustainable competitive advantage. In order to gain a sustainable competitive advantage, it is necessary

---

\* Dr., Beykent Üniversitesi, Sosyal Bilimler Enstitüsü

Dr., Beykent University, Social Sciences Institute

ORCID 0000-0003-2924-292X

kceltekliligil@gmail.com

\*\* Doç. Dr., İstanbul Medipol Üniversitesi, İşletme ve Yönetim Bilimleri Fakültesi, Lojistik Yönetimi

Assoc. Prof., Istanbul Medipol University, Medipol Business School, Logistics Management

ORCID 0000-0001-8743-356X

zadiguzel@medipol.edu.tr

**Cite as/ Atf:** Celtekliligil, K., & Adiguzel, Z. (2021). Examining the effects of dynamic capabilities and knowledge acquisition on innovation and new product performance. *Turkish Studies - Social*, 16(4), 1471-1491.

<https://dx.doi.org/10.47356/TurkishStudies.47152>

**Received/Geliş:** 24 October/Ekim 2020

**Accepted/Kabul:** 25 August/Ağustos 2021

Checked by plagiarism software

**Published/Yayın:** 31 August/Ağustos 2021

CC BY-NC 4.0

to be successful in both innovation and performance. Especially relevant is the success of the product produced for the companies in the production sector, and the success of advantageous positioning that the innovations will bring the company against its competitors. Helfat and Peteraf (2003) claim that the dynamic capabilities approach is a young approach that is beginning to develop at the conceptual level. But, the dynamic capabilities approach has been criticized for containing very different definitions (Arend and Bromiley 2009), a difficulty in measurement (Pavlou and Sawy 2011), and a lack of precise empirical support (Rodenbach and Brettel 2012). Yet, despite the criticisms, dynamic capabilities are considered as a measure and/or a set of qualifications that produce a competitive advantage for businesses (Teece et al. 1997) and directly affect the success of businesses (Teece 2007). Dynamic capabilities, which take their theoretical background from the resource-based view and are expressed as an extension of this view, have been discussed and expressed in different ways and in different dimensions by different theorists and researchers (Barreto 2010; Li and Liu 2014; Pavlou and El Sawy 2006). It is divided into two categories: internal and external (Eriksson 2014). Structural elements are multiple including internal factors, organizational structure (Narayanan et al. 2009), resource allocation, employee capabilities (Ravishankar and Pan 2013) organizational positioning (Zhou and Li 2010), managerial positioning (Ramírez et al. 2013), organizational capabilities (Capron and Mitchell 2009), and organizational practices (Yung-Chul 2013). External factors consist of a variety of characteristics as well: institutionalization (Piening 2013), market (Wilden et al. 2013), environmental factors such as technology (Leung 2012), networking (Cabanelas et al. 2013), joint sourcing (Blome et al. 2013), and learning from foreign partners (Jiao et al. 2013). While examining the factors that affect the formation of dynamic capabilities, organizational structure, organizational capabilities and organizational practices can also be seen in literature research. In the field of dynamic capabilities, the collective mind variable (Pavlou 2002) or the shared meanings variable (Yu et al. 2013), which are concepts close to the organizational culture, are seen as control variables. Another use related to culture in the field is in the form of cultural distance variables in multinational enterprises (Zhan and Chen 2013). Environmental pressures, such as changes in customer demands and technological breakdowns, reduce the attractiveness of existing products and services to buyers and create new opportunities for companies. Evaluating opportunities and reorganizing existing resources provides a competitive advantage but making this competitive advantage sustainable is getting more and more difficult in today's world. What matters in this process is whether this competitive advantage is sustainable. Although the ultimate goals of the enterprises are one in accordance with the organizational cultures, they strive to achieve the same ultimate goals in different ways due to the fact that the resources they have, their experience from the past, and most importantly, their capabilities are different from each other. Teece and Pisano (1994) define which path an enterprise will follow as a function of the path it comes from, its location, and the roads in front of it. By being aware of these differences and evaluating them, the company's performances can positively change if the enterprises that enable them to develop skills facilitating their change are implemented in a way to distinguish them from their competitors. There are many businesses that own high-value technological assets, such as IBM, Texas Instruments, and Philips, and although they are protected by serious copyright, they cannot maintain their competitive advantage over time (although the American Stock Exchange tripled in value between 1980-1994, the share values of these three companies remained almost the same). Companies that can continue to exist in global competition are companies that can perform fast and flexibly in product renewal, respond to the demands of the markets on time, and use their management skills to activate their internal and external competencies (Teece et al. 1997). Hamel and Prahalad (1990) state that in order to gain a competitive advantage, businesses should discover new markets and quickly adapt to these developing markets, finding ways to direct customer habits in the markets. In order to achieve this, he states that the management culture must be able to develop a company culture that can create products and services that customers need but are not even aware of yet and incorporates talents with a wide range of functionality. However, the point that should not be misunderstood here is that investments, such as R&D, cannot achieve these by themselves, and this way of thinking needs to spread throughout the whole business. If this were not the case, Toyota would not have surpassed General Motors in the passenger car market, nor could Canon surpass Xerox in the copiers market. It should be noted that R&D expenditures of General Motors and Xerox are almost equal to the budgets of Toyota and Canon. At this point, the issue of how companies gain a competitive advantage, and more importantly, how they sustain this advantage, has become the most fundamental question in academic and practical terms. Although multiple attempts to answer this question have been tried, it is only possible to gather the meanings under two headings within the literature. The first of these is market-based approaches, based on the view from the outside to the inside, and the other is the resource-based approach, which is based on the view from the inside to the outside. In addition to these, the

concept of dynamic capabilities, whose foundations were laid at the end of the nineties, is one of the most up-to-date and valid approach models accepted as an improved resource-based approach. In this research, the effects of dynamic capabilities on both knowledge acquisition, innovation performance, and new product performance are examined. The research was carried out in companies producing spare parts in the automobile industry. Surveys from 375 engineers were collected and analyzed, and as a result of the analysis, it can be explained that companies that produce spare parts as a result of the change and transformation that have occurred in the automobile sector have dynamic capabilities, and furthermore, that they are successful in innovation performance.

**Keywords:** Dynamic capabilities, knowledge acquisition, innovation performance, new product performance, hayes process

**Öz:** Örgütlerin rekabet ortamında başarılı olabilmesi buldukları sektörde rakiplerine göre farklılaşabilmelerine ve aynı zamanda tüketicilerin istek ve ihtiyaçlarına cevap verebilme yeteneklerine bağlıdır. Bu nedenle örgütlerin sahip oldukları dinamik yetenekler ve bilgin edinme kabiliyetleri rakiplerden farklılaşabilmeleri için önemli faktörlerdir. Yani, örgütlerin dinamik yapısı ve çevreden elde edilen bilgiler, yeni ürünler geliştirmede avantaj sağlayabilmektedir. Ayrıca dinamik yeteneklerin bilgi ile desteklenmesi durumunda örgütlerin yaratıcılık faaliyetleri artarak inovasyon performansı olumlu yönde etkilenebilir. İnovasyonda başarılı olabilmek için örgütlerin dinamik yetenekleri kullanmasının yanı sıra bilgiyi de kullanabilmeleri gerekmektedir. Araştırma 2019 yılında, sürekli değişimin ve yeniliklerin olduğu dinamik bir yapıya sahip olan otomobil sektöründe bulunan otomobil yedek parça üreten firmalarda yapılmıştır. Anketler yüz yüze görüşme yönetimiyle 375 mühendis'ten toplanmış ve analizler SPSS 25 programı kullanılarak yapılmıştır. Anket yöntemi 5'li Likert ölçeğinde olduğundan dolayı faktör ve güvenilirlik analizleri yapıldıktan sonra korelasyon ve regresyon analizi yapılmıştır. Sobel Testi ve Hayes Process aracı değişken etkisinin analizi için yapılmıştır. Çalışma sonucunda, üretim sektöründeki firmaların yetenek ve bilgi kapasitelerinin, rekabetin yüksek olduğu bir ortamda ürün performansını yeterince etkilemediği sonucuna varılmıştır. Bunun nedeni rakiplerin rekabette daha başarılı olması ve ürün performansı açısından tercih edilmesi olabilir. Gelecekte yapılacak çalışmaların dinamik yetenekler ve bilgi edinmenin özellikle teknoloji ve ar-ge odaklı şirketlerde yapılması literatüre katkı açısından önemli olacaktır.

**Anahtar Kelimeler:** Dinamik yetenekler, bilgi edinme, yenilik performansı, yeni ürün performansı, hayes process

## 1. Introduction

Organizations, which are the main actors of today's business life, feel more and more in need of access to information, learning, and knowledge in order to adapt to changes in the new socio-economic order. The collapse of the eastern bloc, the removal of commercial barriers that secure local markets, and a converging universal market make the development of effective learning tools inevitable for organizations. As the world of knowledge gradually becomes global, the dynamic nature of knowledge forces people to become individuals who are open to change and development. The most accurate and simple way of accessing knowledge is learning, and the more important it is for the individual, the more important it is for organizations. Learning is the responsibility of the individual, as well as the groups, teams, and organizations. Indeed, the fastest-learning organizations will retain supremacy and push "dinosaur" organizations out of the race in the future. Knowledge is the basis of innovation, and innovation is shaped by the production of knowledge. In order to achieve or develop innovation in any organization, it is necessary to increase the capacity of knowledge and to widely use the knowledge. It is emphasized that the innovation process is effective in defining knowledge and that innovation can occur as a result of producing technological knowledge. Basadur and Gelade (2006) examined the role of knowledge in the process of innovation, and in the study, there were four basic divisions in the process of innovation: production, conceptualization, development, and application. Additionally, it is possible to think that the interactions between globalization and human beings are gradually

increasing due to technical means, and that minor influences make sudden and non-linear changes that have great consequences. Considering the existing dynamics that shape modern business life, it can be concluded that it is necessary to reconsider the approaches that have been produced in the area of management and research in the field of change and learning. Based on the presumption that there is an important link between adapting the organizations to change and organizational knowledge acquisition, we have developed the idea of creating an accumulating resource for academics and scholars in the area of management and organization and dealing with relevant theories in the field. For this purpose, we have brought together the approaches that deal with organizational innovation performance and learning with micro and macro dimensions. In fact, many studies in this area have shown that people and organizations are willing to maintain the current situation and are keen to change even when there are merely compulsory causes. Organizations include energetic individuals and teams, and it is inevitable that those who make the changes need the support of these people and groups in practice. In addition, the adoption of innovations by organizations over time has become a frequently discussed subject, especially with those scientists who do research in many disciplines related to the diffusion of innovation who have focused on explaining and modeling the process of innovation diffusion in terms of sociology, economics, communication, and organizational theory. Looking at the models made, it is aimed to determine the levels of change that occur with the adoption of innovation, and furthermore, to determine the emerging internal and external dynamics. Another important issue in the evaluation of models made in terms of organizations is to examine the effects of innovation in terms of organizational learning, organizational structure, and organizational change (Robinson et al. 2003). As a result of the research in the literature, it is aimed to examine the innovation and new product performance in the companies that produce spare parts in the automobile industry in terms of dynamic capabilities and knowledge acquisition.

## **2. Literature Review**

In order to support the research model, the research conducted within the theoretical scope must be strong. Therefore, variables are examined theoretically to support the research model.

### **2.1. Innovation Performance**

Innovation is derived from the Latin word *Innovationare*, which means "to do something new and different." In other words, innovation is the initiation of innovation with the production of new knowledge. When the research in the literature is examined, when innovation is evaluated in terms of knowledge production, it is explained as achieving commercial success by integrating new knowledge with existing knowledge in the use of new production processes (Jamrog et al. 2006; Rennings 2000). Looking at the studies examining innovation performance, it can be seen that many factors are discussed in the literature. In particular, there are studies that examine organizational and environmental factors on innovation performance, as well as knowledge management. Considering the main factors that ensure success in innovation performance, there are many influential factors, such as the qualifications of employees, leadership characteristics, and organizational culture. Along with these basic factors, the dynamic capabilities of organizations and their ability to use information can affect innovation performance. Innovation activities are important for businesses as well as their contribution to the national economy and better service to customers. Regarding the issue, Wang and Hu (2020) emphasized that the development of enterprises will be achieved through innovative activities; for the main reason that businesses need new products and processes to increase and protect their profits and improve their market shares. Pearson and Ingleton (1994) stated that good ideas often arise with the process of taking a close look at customers, competitors, and their business. Porter (1989) stated that a nation that can increase efficiency can gain a competitive advantage in international markets, and innovation and competence in innovation are required to increase efficiency. In this context, while innovation appears to be an important factor in increasing productivity and profitability, businesses must also

---

take advantage of innovation activities to be sustainable. On the other hand, the expectation that innovations emerge in time rather than instantaneously, and that they spread within the process, reveals the necessity of dealing with both innovation and propagation processes together (Liang et al. 2018). In order for innovation to be realized, process management must also be managed successfully. For this reason, innovation is the ability to be able to respond to requests and needs, and must be realized in creative activities (Abdallah et al. 2019). In the research, as a result of the literature review, how dynamic capabilities and knowledge acquisition affect innovation performance in organizations is analyzed.

## 2.2. New Product Performance

Schumpeter (1939) defined innovation as the use of new production techniques, the discovery of new sources of raw material supply, the introduction of new outcomes to the market, the creation of new markets, and the establishment of new industrial spaces. Similarly, the ability of cross-functional teams involvement in new product development in order to advance successful new products most arguably lies in the development of innovation. In fact, some products developed within the same enterprise stand out as examples of successful innovation, while others are observed to be unsuccessful (Visnjic et al. 2016). For instance, Google, which has an important place among today's high-tech businesses, developed Buzz (a social networking, microblogging and messaging tool integrated into the network-based Gmail), but this tool eventually failed in the market for Google+ (Dwyer 2011). Still, Google is at the top of the list of the most innovative businesses in the world thanks to its successful products (e.g. Gmail). Also, Sony has developed innovative products in various fields, in particular, their smart mobile phones, which have not seen much demand in the relevant market for a long time (Oliinyk et al. 2018). One of the main reasons behind these successes and failures is likely to be the difference in innovation ability between businesses and teams that are active in any business. Innovation is the transformation of an original idea into a marketable benefit as a result of the input, conversion, and output process. With the introduction of the concept of innovation in the economic literature, many definitions have been developed (Lau et al. 2011). Some of them see innovation as 'enterprises to implement new applications in new product development or management systems, while others see innovation as' enterprises improving both working conditions and using new methods in product production (Engelman et al. 2017). Reducing innovation to the development of physical elements is an important obstacle to its understanding. In essence, innovation begins with the production of new information. When an evaluation is made within the scope of the research in the literature, the effects of innovation on new product performance are evident because innovation is the achievement of new ideas realized within the capabilities of organizations, most markedly within both new products and services and commercial success in the development of new products (Cooper 2005). Here, the meaning of the new concept refers to being new for businesses, consumers, users, manufacturers, distributors and product technology, and for their combination (Yao et al. 2013). Product innovation is basically an important process for developing products and services or for renewing them to create completely new products and services, and for securing the future of the enterprise (Danneels 2002). Product innovations in the manufacturing sector are associated with the development of an existing product or the competitive advantage of a new product in the market (Reguia 2014). At the same time, with the introduction of a new product to the market, the aim of the organizations is to take advantage of the opportunities, to discover the needs in the market and respond to the demands, and to gain an advantage over the competitors by responding more quickly to the changes that may occur in the market (Aloulou 2019). Therefore, it can be explained that there is a strong relationship between the organizational structure's adoption of innovation and new product performance (Olavarrieta and Friedman 2007). And, the fact that the organizational structure is innovative and has dynamic capabilities can have an impact on new product performance. Looking at these studies, the effects of dynamic capabilities and knowledge acquisitions of organizations on new product performance are examined.

---

### 2.3. Dynamic Capabilities

The concept of dynamic capabilities is defined as an extension of the resource-based approach in strategic management (Peteraf and Barney 2003; Wernerfelt 1995). Dynamic capabilities are those that enable the business to create new goods and methods and reply to changing market conditions (Teece et al. 1997). It is emphasized that the resource-based approach will not be sufficient, and dynamic capabilities should be defined in order to ensure sustainability in a competitive environment where environmental uncertainty is high (Wu 2010). Organizations need their core capabilities and dynamic capabilities, especially in conditions of high environmental uncertainty and in order to maintain a competitive advantage. Although there are more conceptual studies on this subject, it is seen that empirical studies are very limited and especially based on innovation-based high technology sectors (Flor et al. 2018; Augier and Teece 2007). Therefore, it becomes even more important to investigate the impact of dynamic capabilities on innovation. On the other hand, Winter (2003) asserted that dynamic abilities are activities used to expand, adapt, and sustain natural abilities. In contrast, Eisenhardt and Martin (2000) do not see dynamic abilities as talents but as resources. Furthermore, these resources are transformed into new values that form a strategy, broadening the definition by expressing them as strategic organizational processes, such as output development, compliance, and strategic decision- all of which create worthy values for the enterprises in the nonconformist market. Clearly, in order to be successful in strategic organizational processes, the obtained information must be correctly analyzed. Also, when we look at the definitions of dynamic capabilities, it is seen that these definitions explain what dynamic capabilities are and what they are not. Dynamic capabilities are not a usual reaction or problem-solving technique for an event but often include repetitive actions that follow a route. In addition, there is no chance factor in dynamic capabilities because dynamic capabilities are created willingly for a specific purpose (Zahra et al. 2006). Within the framework of strategic management, the resource-based approach is mainly based on the "Firm Growth Theory" study by economist Penrose and Penrose (2009). Penrose and Penrose (2009), in this study, question the classical economic theory in which the companies consider homogeneous attempts. As a result of this questioning, the firm defines the company as the administrative structure, which is a combination of the perceived opportunities and the growing, tangible, and intangible resources. According to Penrose and Penrose (2009), the competitive advantage that enables a company to grow is directly related to its structuring from its resources. Teece and Pisano (1994) relate dynamic capabilities to innovation, and in this context, the ability of dynamic capabilities to respond to product innovation timely and quickly, and to effectively correlate and mobilize stated internal and external qualifications. The hypotheses developed and tested in this scope is the following:

H1: Dynamic capabilities have an effect on knowledge acquisition

H2: Dynamic capabilities have an effect on innovation performance

H3: Dynamic capabilities have an effect on new product performance

### 2.4. Knowledge Acquisition

What researchers call knowledge transfer can be defined as knowledge integration, knowledge production, or mutual learning, with each of the processes of absorbing, adapting, and developing the transferred knowledge constituting knowledge transfer. In other words, the production of new knowledge accompanies the transfer of knowledge in the source. Szulanski (2000) made an important determination in this field and said, "The reason for the use of the term of transfer of knowledge, instead of the spread of knowledge, is not because of the gradual scattering of the movement of knowledge, but because it is a unique experience and phenomenon." On the other hand, in the study of Yeung et al. (2008) where a clear distinction is made between knowledge production and knowledge transfer, over 40 companies in 40 countries have been applied through survey research on organizational learning. In this study, a new skill type has been

defined: organizational learning ability. Organizational learning ability depends on the development of these three competencies, and the knowledge-based perspective focused on strategy, research, and knowledge and ways to improve it (Jiang et al. 2016). The factor of imitating knowledge is increasingly emphasized in the studies included in the scientific article on competitive advantage and sustainability (Van Wijk et al. 2008). In accordance with this approach, when the relationship between knowledgeable companies and those who want to be informed is examined on the basis of imitation, strategic cooperation initiatives are both suitable and challenging tools and methods for one company to learn and internalize another's competencies. With the increase in the number and variety of strategic alliances in recent years, the number of studies conducted to understand how partners have learned from each other and how they have developed new competencies is gradually increasing. On the other hand, creating an organizational culture open to innovation in organizations requires a structure based on knowledge and knowledge sharing. The culture of knowledge sharing involves a two-way structure: structuring knowledge sharing as an organizational strategy and encouraging employees to change behavior and habit patterns for knowledge sharing. In this structuring, individuals share their knowledge and experience with their colleagues to make their work better, faster, and more effective. The culture of knowledge sharing on an organizational basis is to acquire, organize, and transform knowledge, while still making it available to everyone at the organizational level (Lin 2007). Therefore, how organizations use knowledge acquisition is becoming more important, both in terms of innovation and product performance.

The hypotheses developed and tested in this scope is the following:

H4: Knowledge acquisition has an effect on innovation performance

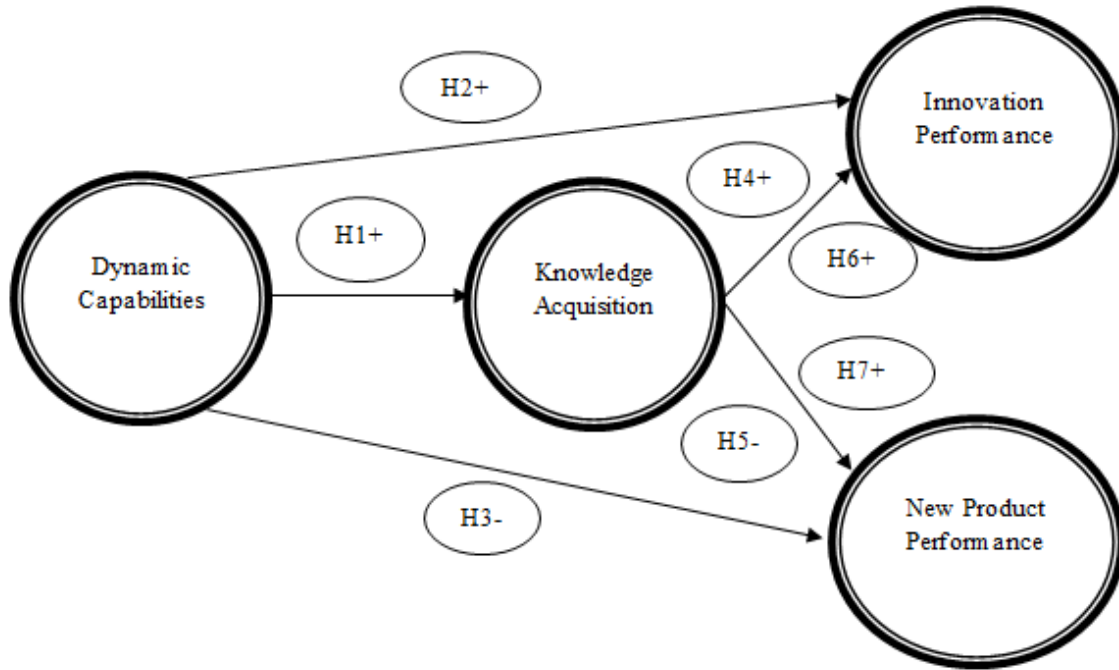
H5: Knowledge acquisition has an effect on new product performance

H6: Knowledge acquisition has a mediation variable effect on the relationship between dynamic capabilities and innovation performance

H7: Knowledge acquisition has a mediation variable effect on the relationship between dynamic capabilities and new product performance

### **3. Research Framework**

In the research, the effects of dynamic capabilities and knowledge acquisition on both innovation performance and new product performance in companies producing spare parts in the automobile industry were examined. Since the quantitative analysis method was used in the research, the data were analyzed to examine the relationships between the variables.



**Figure 1:** Research Model

#### 4. Methodology

In the methodology section, the relationships between the variables examined within the scope of the research model are analyzed, and the findings are evaluated and interpreted. In the analyzes, firstly, factor analysis was performed in accordance with the methodology, and after the reliability, correlation, and regression analyzes were performed; the research was evaluated with the discussion and conclusion part.

##### 4.1. Research Goal

In this article, it is aimed to conduct research on companies that produce spare parts for the automobile industry. In recent years, there has been a significant change in the production of electric cars, and since 2030, rapid investments have been made in the automobile industry to produce hybrid and electric cars instead of fuel-oil vehicles. Within the framework of this scope, and with the change in the automobile industry, companies producing spare parts are directly affected by this change. Aimed to examine the effects of the dynamic capabilities and knowledge acquisition of the companies producing automobile spare parts on innovation and new product performance.

##### 4.2. Sample and Data Collection

Within the scope of the study, questionnaires were collected from 375 engineers working in companies producing automobile spare parts in 2019; in particular, engineers were selected because they have the knowledge to answer questions about innovation and new product performance. The collected data were analyzed in the SPSS 25 program. The Sobel test and Hayes process were used to analyze the mediation variable.

The survey consists of scale questions representing demographic information and the variables and the Dynamic Capabilities Scale by Alsos et al. (2008), Easterby-Smith et al. (2009), Makkonen et al. (2014), McKelvie and Davidsson (2009), was used in the study. In the Knowledge Acquisition sample, the scale was improved by Jiang et al. (2016), which was developed by Li et



---

al. (2010). Innovation Performance, Lichtenthaler and Lichtenthaler (2009), Winter (2006), Laursen and Salter (2006) and New Product Performance Scales were measured by Atuahene-Gima and Ko (2001) and Moorman (1995). In terms of Scale, the 5-point Likert scale of “strongly disagree” and “strongly agree” has been used.

#### **4.3. Demographic Features**

375 engineers working in companies producing automobile spare parts participated in our survey. Out of 375 engineers participating in our survey, 223 were male and 152 were female. At the same time, engineers were asked about their levels of achievement in innovation, and while 117 engineers said it was high in achieving the goals in innovation, 184 engineers stated that they were at the middle level in reaching the targets. 74 engineers state that they are low in terms of achieving their goals in innovation.

#### **5. Analyses**

With factor analysis, the results of Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity tests were examined in order to evaluate the suitability of the data. Values between .50-1.0 were accepted as KMO values. As a result of the analysis, the KMO value was .952 and the Bartlett test result was sig. since it is  $.000 < p < .005$ , it can be accepted that the data were suitable for factor analysis. Data were collected with a 38-question questionnaire. As a result of factor analysis, 10 scales were excluded because they did not show factor distribution. Table 1 shows the remaining 28 questions with their factor loads divided into 4 factors:

**Table 1: Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>	Component			
	1	2	3	4
DC15. The company has procedures to systematize employee experiences.	0.839			
DC12. The company uses its capabilities to impress its surrounding competitors.	0.838			
DC10. In the company I work for, the personal talents of the management positively affect the company's capabilities.	0.833			
DC16. New working methods are applied in the company I work for.	0.833			
DC13. Employees are actively involved in the development of new products.	0.828			
DC14. Employees also take an active role in the management of new production processes.	0.804			
DC11. The talents of the employees are an important source of information for the company.	0.798			
DC9. The company I work with uses networks as a source of information.	0.795			
DC8. The company I work for is developing procedures for R&D.	0.789			
DC17. Employees have sufficient authority to take advantage of new events as long as they do not affect existing activities.	0.789			
DC7. The company I work with supports R&D processes.	0.746			
DC6. The company I work for has suitable future plans for R&D activity.	0.724			
DC1. The company I work for systematically examines new business concepts by observing the processes in the environment.	0.688			
DC5. The company I work with increases its R&D investments.	0.645			
DC2: The company I work for attaches importance to the ideas of creative and knowledgeable people within the company to identify new business opportunities.	0.629			
IP3. The company I work for is always the leader in the market in new products.		0.816		
IP5. The company I work with is very efficient in innovation projects.		0.781		
IP2. The company I work for is always ahead in technology innovation.		0.770		
IP4. The company I work for is very good at developing Innovation projects.		0.753		
IP1. The competitive power of the company I work for in technology is very good.		0.749		
IP6. Costs per innovation are pretty good.		0.716		
KA5. The company I work with has a good command of management techniques.			0.757	
KA4. The company I work for learns marketing management knowledge in a competitive environment.			0.729	
KA3. The company I work for learns production skills in a competitive environment.			0.657	
KA2. The company I work for learns its new product development skills in a competitive environment.			0.552	
NPP3. The return on assets is very good compared to the stated target.				0.875
NPP2. Sales are very good according to the sales target.				0.833
NPP4. The profit margin is very good compared to the set target.				0.787
NPP1. The market share is very good according to the stated target.				0.750
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

DC: Dynamic Capabilities, IP: Innovation Performance, KA: Knowledge Acquisition, NPP: New Product Performance; 5 Likert scale ('strongly agree', 'not strongly agree').

Cronbach alpha reliability criterion was used in the study. The expressions between each variable were tested with this method. According to the results of reliability analysis with Cronbach alpha, it can be said that there is internal consistency (Nunnally and Bernstein 1994; Hair et al. 2014).

**Table 2:** The Results of Reliability Analysis

Variables	Number of Questions	Cronbach Alpha ( $\alpha$ ) Values
Dynamic Capabilities	14	.964
Innovation Performance	6	.929
Knowledge Acquisition	4	.811
New Product Performance	4	.833

In quantitative research, correlation analysis is performed to determine whether there is a significant relationship between the variables. Correlation analysis indicates the level and direction (whether positive or negative) of the relationship between the variables (Ural and Kılıç 2013).

**Table 3:** Correlations

Correlations		Dynamic Capabilities	Knowledge Acquisition	Innovation Performance	New Product Performance
Dynamic Capabilities	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	375			
Knowledge Acquisition	Pearson Correlation	.528**	1		
	Sig. (2-tailed)	0.000			
	N	375	375		
Innovation Performance	Pearson Correlation	.590**	.702**	1	
	Sig. (2-tailed)	0.000	0.000		
	N	375	375	375	
New Product Performance	Pearson Correlation	.104*	.115*	.187**	1
	Sig. (2-tailed)	0.024	0.012	0.000	
	N	375	375	375	375

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Regression analysis was performed to test the hypotheses after the correlation analysis. Table 4 shows the regression analysis results.

**Table 4:** Regression Analysis Results

IV	DV	Standard $\beta$	Sig.	Adjusted R Square	F Value
Dynamic Capabilities	Knowledge Acquisition	.528***	.000	.278	182.452
Dynamic Capabilities	Innovation Performance	.590***	.000	.347	251.774
Dynamic Capabilities	New Product Performance	.104	.024	.009	5.114
Knowledge Acquisition	Innovation Performance	.702***	.000	.492	458.569
Knowledge Acquisition	New Product Performance	.115	.012	.011	6.320

\*: p&lt;0.05

\*\*.:p&lt;0.01

\*\*\*:p&lt;0.001

According to the results of the regression analysis, dynamic capabilities should have no effect on new product performance. This situation may be due to the fact that the dynamic capability concept is not fully understood in the companies that produce the spare parts under investigation. At the same time, the fact that knowledge acquisition has no effect on new product performance is likely to create confusion about what the concept of knowledge acquisition means in such firms.

**Table 5:** Hypothesis Results

Hypothesis	Supported / Unsupported	Level of Significance (Sig.)
<i>H1: Dynamic capabilities have an effect on knowledge acquisition</i>	Supported	<i>P&lt;0.001</i>
<i>H2: Dynamic capabilities have an effect on innovation performance</i>	Supported	<i>P&lt;0.001</i>
<i>H3: Dynamic capabilities have an effect on new product performance</i>	Unsupported	
<i>H4: Knowledge acquisition has an effect on innovation performance.</i>	Supported	<i>P&lt;0.001</i>
<i>H5: Knowledge acquisition has an effect on new product performance.</i>	Unsupported	

Regardless of the analysis of the mediation variable effect, table 6 shows the results of regression analysis. According to the results in Table 6, the H7 hypothesis cannot be supported.

**Table 6:** The Effect of the Mediation Variable

	IV	DV	Standard $\beta$	Sig.	Adjusted R Square	F Value
Regression	Dynamic Capabilities	Innovation Performance	.304***	.000	.347	251.774
	Knowledge Acquisition	Performance	.542***	.000	.558	298.967
Regression	Dynamic Capabilities	New Product Performance	.059	.271	.009	5.114
	Knowledge Acquisition	Performance	.084	.121	.012	3.769

\*: p&lt;0.05

\*\*.:p&lt;0.01

\*\*\*:p&lt;0.001

The method developed by Sobel in 1982 is also used to analyze the mediation variable effect. The method applied by Aroian (1944/1947) and Goodman (1960) before Sobel was

developed and used by Sobel (1982) with regression coefficients and standard error values. Using Mackinnon et al. (1995), this method has been extended statistically.

**Table 7: Sobel Test**

<b>H6: Analysis of the knowledge acquisition mediation variable effect in the relationship between dynamic capabilities and innovation performance by the Sobel test;</b>					
	<b>Input:</b>		<b>Test statistic:</b>	<b>Std. Error:</b>	<b>p-value:</b>
a	0.417	Sobel test:	10.01455246	0.02373446	0
b	0.570	Aroian test:	10.00224037	0.02376368	0
Sa	0.031	Goodman test:	10.02691013	0.02370521	0
Sb	0.038				
<b>H7: Analysis of the knowledge acquisition mediation variable effect in the relationship between dynamic capabilities and new product performance by the Sobel test;</b>					
	<b>Input:</b>		<b>Test statistic:</b>	<b>Std. Error:</b>	<b>p-value:</b>
a	0.417	Sobel test:	1.52849726	0.02182536	0.12638912
b	0.080	Aroian test:	1.52434514	0.02188481	0.12742252
Sa	0.031	Goodman test:	1.53268349	0.02176575	0.12535386
Sb	0.052				

If the P value is less than 0.05, it can be said that the mediation variable has an effect in the Sobel test. Therefore, the H6 hypothesis is accepted, but the H7 hypothesis is rejected.

After the Sobel test, Hayes Process was also performed to analyze the mediation variable effect. Thanks to this method developed by Hayes in 2017, the effect of the mediation variable can be analyzed. After the Hayes Process was added to the SPSS program, the mediation variable effect was analyzed in the 4th Model.

**Table 8: Hayes Process**

Analysis results of H6 hypothesis in Hayes process;				Analysis results of H7 hypothesis in Hayes process;			
Model : 4				Model : 4			
Y : Innovati				Y : NewProdu			
X : Dynamicc				X : Dynamicc			
M : Knowledg				M : Knowledg			
Sample				Sample			
Size: 375				Size: 375			
Indirect effect(s) of X on Y:				Indirect effect(s) of X on Y:			
Effect	BootSE	BootLLCI	BootULCI	Effect	BootSE	BootLLCI	BootULCI
Knowledg	,2379	,0327	,1762 ,3062	Knowledg	,0335	,0245	-,0136 ,0835
Partially standardized indirect effect(s) of X on Y:				Partially standardized indirect effect(s) of X on Y:			
Effect	BootSE	BootLLCI	BootULCI	Effect	BootSE	BootLLCI	BootULCI
Knowledg	,3059	,0372	,2349 ,3829	Knowledg	,0472	,0341	-,0195 ,1150
Completely standardized indirect effect(s) of X on Y:				Completely standardized indirect effect(s) of X on Y:			
Effect	BootSE	BootLLCI	BootULCI	Effect	BootSE	BootLLCI	BootULCI
Knowledg	,2863	,0356	,2180 ,3587	Knowledg	,0442	,0321	-,0179 ,1092

One of the most important features of Hayes process analysis is that if there is a "0" value between BootLLCI and BootULCI, there is no mediation variable effect. In the mediation variable effect in which the H6 and H7 hypotheses are analyzed, the H6 hypothesis is accepted but the H7 hypothesis is rejected.

Hypothesis results;

**Table 9:** Supported / Unsupported Research Hypotheses

Hypotheses	Supported / Unsupported	Level of (Sig.)
<i>H6: Knowledge acquisition has a mediation variable effect on the relationship between dynamic capabilities and innovation performance.</i>	<b>Supported</b>	<i>P&lt;0.001</i>
<i>H7: Knowledge acquisition has a mediation variable effect on the relationship between dynamic capabilities and new product performance.</i>	<b>Unsupported</b>	

It can be explained that the H7 hypothesis is not supported as a result of the Sobel and Hayes process analysis performed for the analysis of the mediation variable effect. There is no knowledge acquisition mediation effect between dynamic capabilities and new product performance.

## 6. Discussion

The study was conducted to investigate how the competencies of the firms in the manufacturing sector, specifically in terms of their ability to acquire information in the competitive environment, as well as how they deal with the innovations in both innovation performance and product performance. As a result of the research carried out in the literature, it is revealed that the dynamic structure within the organization is a result of the information learned and developed by the companies in order to be successful in the competitive environment. Zollo and Winter (2002) defined dynamic capabilities as a learned model of activities that occur when the organization changes its organization routines by emphasizing the importance of customer and competition. The first period of dynamic capabilities is the resource-based view, which began with Penrose and Penrose (2009) study and was developed with the contributions of Barney (1991). In particular, a resource-based perspective that translates the strategic view into the company and into the resource base is of great significance in comprehending the dynamic capabilities of the enterprises. The dynamic capabilities perspective proposes that capabilities permit the integration and use of resources to the organisation's profits. Dynamic capabilities have a mediating effect between the resources of organizations and organizational performance. Studies indicate how organizations should transform their ordinary resources into extraordinary transactions that are difficult to imitate, and this is a step that should be considered between resources and firm success (Burvillet al. 2018). As a result of the analyzes, the effect of capabilities and knowledge on production of new products, in general, is seen as meaningless and suggests that studies in the manufacturing sector should be developed conceptually in this field (Ambrosini et al. 2009; Easterby-Smith et al. 2009). Wang et al. (2015) and Wamba et al. (2017) stated in their research that dynamic capabilities have a positive effect on company performance. Fainshmidt et al. (2016) explain the effect of dynamic capabilities on organizational performance in their research. In addition, Wu et al. (2016) and Mikalef et al. (2019) state that dynamic capabilities have a positive effect on innovation in their research. Results obtained with the capabilities and knowledge acquired by the organizations also have a positive effect on innovation performance. However, this positive effect on innovation can be concluded as the fact that competitors alone do not suffice in the performance of new products. Not only does it mean that innovative performance will be good enough for organizations to achieve sustainability in a successful way but also that innovative performance should be positively reflected in new product performance. The way to success in competition lies in the fact that the products placed on the market are preferred more than the products of the competitors. The research carried out in the manufacturing sector contributes to a particular analysis of the dynamic capabilities of the organizations and the environment in which they operate. Porter's (1980) defined that the basic processes include motivating alteration, making a preparation for change among the fellows of the organization, and overcoming a resistance to change. This involves the creation of an environment in which people recognize the requirement for change and the provision of the

---

necessary physical and psychological environment. In addition, this includes providing resources for activity change applications, structuring support systems for exchange representatives, developing new capabilities and capabilities, and consolidating new attitudes needed for change practices. In the end, if the change is not made permanent, it will be a return to the old, which will cause all efforts to be wasted (Porter 1980). In order to guide future studies, it is necessary to develop a more extensive study of variables at the theoretical level where the relationship between the working environment, the capabilities of the organization, and the acquisition of information is interconnected. For this reason, future analyzes should take into account other environmental conditions and organizational structures other than innovation, which, so far, have focused on mostly research (Easterby-Smith et al. 2009).

## 7. Conclusion

These results support the theoretical explanations of innovation and product performance-based on the knowledge concept and ability approaches of the firms in the manufacturing sector. In general, the research model shows the significant impacts of the firms in the manufacturing sector on the innovation performance of knowledge and skills in a highly competitive environment. In the competition-oriented structure, because of the new products offered to the market by the companies and the competence of the competitors with the use of better skills and information, it is revealed that the skills and knowledge are in an ineffective position in terms of the effects of the new outputs on the performance of the companies. Innovation in the context of information production is the use of new production processes as a result of the integration of new information into existing information, thus fusing new components to produce an output of commercial value. On the other hand, globalization forces enterprises to tackle aggressive competitive strategies of challenging competitors. Changing customer expectations and reducing product-life cycles rapidly transforms enterprises into developing new products in the orbit of technology. Successful product innovation includes four elements: (1) combining market needs and technological potential (2) incorporating creative solutions produced into problems (3) effectively managing the process and (4) deciding to engage in this issue (Dougherty 1999). Product innovation is a progression that increases the life expectancy and competition value of a new product or service or an existing product or service. In this regard, product innovation is one of the key business processes that transform the needs and opportunities around the enterprise into satisfied needs and occasions. Looking at the studies in the literature, it is explained in the research conducted by Wu (2006) that dynamic abilities affect performance positively. Also, Wilden et al. (2013) also stated in their research that dynamic abilities affect performance positively. As a result of analyzes, the importance of developing innovation activities and capabilities in organizations within the main element of competitiveness emerges once again. While the effect of dynamic capabilities on innovation performance is positive, it is concluded that there is no effect on new product performance. The main reason for this result can be explained by the assumption that the products of the firms examined in the research do not perform as well as the products of the competitors: they produce better products in the competitive environment. When the studies in the literature are examined, it is seen that there are similar results. For example, Prieto et al. (2009) stated in their research that dynamic capabilities have no effect on product development. However, Kotabe et al. (2011) explains that obtaining information has no effect on new product performance. However, Li and Gao (2021) explain in their research that acquiring knowledge has a positive effect on innovation performance. These results show that the results can be similar in different cultures and different company structures. When an overall assessment is made, mainly production-oriented companies need to make technology-oriented investments, have a dynamic structure, and attach importance to the concept of information since these criteria are important in order to compete with competitors in competitive conditions. The study supports the idea that building information-related resources is effectively affiliated with the concept of talent, which is, in essence, the creation of dynamic capabilities, such as innovation detection, product development capabilities,

special focus on the organization, and the values and beliefs associated with the importance attached to the competition. It would not be correct to generalize the results because the research was conducted in a limited area. Since the data are collected only from engineers working from companies that produce automobile spare parts in the production sector, the results obtained from the studies need to be carried out in companies in different fields in the production or service sector. We think that it will be important to contribute to the literature, especially in future studies, in companies that produce high-tech products in the field of technology or in companies that provide high-tech services in the service sector. In addition, it will be better for researchers to focus on studies examining the competitive environment and conditions in future studies.

### References

- Abdallah, B., Dahiyat, E. & Matsui, Y. (2019). Lean management and innovation performance: Evidence from international manufacturing companies. *Management Research Review*, 42, 239-262.
- Aloulou, W. J. (2019). Impacts of strategic orientations on new product development and firm performances. *European Journal of Innovation Management*, 22(2), 257-280. <http://dx.doi.org/10.1108/EJIM-05-2018-0092>
- Alsos, G. A., Borch, O. J., Ljungren, E. & Madsen, E. L. (2008). Dynamic capabilities Conceptualization and operationalization. *Paper presented at Academy of Management 2008 annual meeting*, August 8–13, Anaheim CA, USA.
- Ambrosini, V., Bowman, C. & Collier, N. (2009). Dynamic capabilities: An exploration of how firms renew their resource base. *British Journal of Management*, 20, 9–24. <http://dx.doi.org/10.1111/j.1467-8551.2008.00610.x>.
- Arend, R. J. & Bromiley, P. (2009). Assessing the dynamic capabilities view: spare change, everyone?, *Strategic Organization*, 7(1), 75–90, <http://dx.doi.org/10.1177/1476127008100132>
- Aroian, L. A. (1944/1947). The probability function of the product of two normally distributed variables. *Annals of Mathematical Statistics*, 18, 265-271.
- Atuahene-Gima, K. & Ko, A. (2001). An empirical investigation of the effect of market orientation and entrepreneurship orientation alignment on product innovation. *Organization science*, 12(1), 54-74.
- Augier, M. & Teece, D. J. (2007). Dynamic capabilities and multinational enterprise: Penrosean insights and omissions. *Management International Review*, 47(2), 175-192.
- Barney, J. (1991). Special theory forum the resource-based model of the firm: origins, implications, and prospects. *Journal of Management*, 17(1), 97-98.
- Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of Management*, 36(1), 256-280.
- Basadur, M. & Gelade, G. A. (2006). The role of knowledge management in the innovation process. *Creativity and Innovation Management*, 15(1), 45-62.
- Blome, C., Schoenherr, T. & Rexhausen, D. (2013). Antecedents and enablers of supply chain agility and its effect on performance: a dynamic capabilities perspective. *International Journal of Production Research*, 51(4), 1295-1318.



- 
- Burvill, S., Jones-Evans, D. & Rowlands, H. (2018). Reconceptualising the principles of Penrose's (1959) theory and the resource based view of the firm: The generation of a new conceptual framework. *Journal of Small Business and Enterprise Development*, 25, 930-959.
- Cabanelas, P., Omil, J. C. & Vázquez, X. H. (2013). A methodology for the construction of dynamic capabilities in industrial networks: The role of border agents. *Industrial Marketing Management*, 42(6), 992-1003.
- Capron, L. & Mitchell, W. (2009). Selection capability: How capability gaps and internal social frictions affect internal and external strategic renewal. *Organization Science*, 20(2), 294-312.
- Cooper, R. G. (2005). *Product innovation* (pp. 120-156). Basic books.
- Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic Management Journal*, 23(12), 1095-1121.
- Dougherty, D. (1999). Organizing for innovation. *Managing organizations: Current issues*, 174-189.
- Dwyer, C. (2011). Privacy in the Age of Google and Facebook. *IEEE Technology and Society Magazine*, 30(3), 58-63.
- Easterby-Smith, M., Lyles, M. A. & Peteraf, M. A. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management*, 20, S1-S8. <http://dx.doi.org/10.1111/j.1467-8551.2008.00609.x>
- Eisenhardt, K. M. & Martin, J. A. (2000). Dynamic capabilities: what are they?. *Strategic Management Journal*, 21(10-11), 1105-1121.
- Engelman, R. M., Fracasso, E. M., Schmidt, S. & Zen, A. C. (2017). Intellectual capital, absorptive capacity and product innovation. *Management Decision*, 55(3), 474-490. <https://doi.org/10.1108/MD-05-2016-0315>
- Eriksson, T. (2014). Processes, antecedents and outcomes of dynamic capabilities. *Scandinavian Journal of Management*, 30(1), 65-82.
- Fainshmidt, S., Pezeshkan, A., Lance Frazier, M., Nair, A. & Markowski, E. (2016). Dynamic capabilities and organizational performance: a meta-analytic evaluation and extension. *Journal of Management Studies*, 53(8), 1348-1380.
- Flor, M. L., Cooper, S. Y. & Oltra, M. J. (2018). External knowledge search, absorptive capacity and radical innovation in high-technology firms. *European Management Journal*, 36(2), 183-194.
- Goodman, L. A. (1960). On the exact variance of products. *Journal of the American Statistical Association*, 55, 708-713.
- Hair, J. F., Black, W. C., Babin, B. J. & Anderson, R. E. (2014). *Multivariate data analysis: Pearson new international edition*. Essex: Pearson Education Limited.
- Hamel, G. & Prahalad, C. K. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79-91.
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.
- Helfat, C. E. & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24(10), 997-1010.

- Jamrog, J., Vickers, M. & Bear, D. (2006). Building and sustaining a culture that supports innovation. *People and Strategy*, 29(3), 9-19.
- Jiang, X., Yang, Y., Pei, Y.L. & Wang, G. (2016). Entrepreneurial Orientation, Strategic Alliances, And Firm Performance: Inside the Black Box. *Long Range Planning*, 49(1), 103-116.
- Jiao, H., Alon, I., Koo, C. K. & Cui, Y. (2013). When should organizational change be implemented? The moderating effect of environmental dynamism between dynamic capabilities and new venture performance. *Journal of Engineering and Technology Management*, 30(2), 188-205.
- Kotabe, M., Jiang, C. X. & 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.
- Lau, A. K., Yam, R. C. & Tang, E. (2011). The impact of product modularity on new product performance: Mediation by product innovativeness. *Journal of Product Innovation Management*, 28(2), 270-284.
- Laursen, K. & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, 27(2), 131–150. <http://dx.doi.org/10.1002/smj.507>
- Leung, R. C. (2012). Health information technology and dynamic capabilities. *Health Care Management Review*, 37(1), 43-53.
- Li, D. Y. & Liu, J. (2014). Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China. *Journal of Business Research*, 67(1), 2793-2799.
- Li, Y., Wei, Z. & Liu, Y. (2010). Strategic orientations, knowledge acquisition, and firm performance: the perspective of the vendor in cross-border outsourcing. *Journal of Management Studies*, 47(8), 1457-1482.
- Li, Z. & Gao, X. (2021). Makers' relationship network, knowledge acquisition and innovation performance: An empirical analysis from China. *Technology in Society*, 66, 101684.
- Liang, J., Shu, R. & Farh, C. (2018). Differential implications of team member promotive and prohibitive voice on innovation performance in research and development project teams: A dialectic perspective. *Journal of Organizational Behaviour*, 40(1), 91-104.
- Lichtenthaler, U. & Lichtenthaler, E. (2009). A capability-based framework for open innovation: Complementing absorptive capacity. *Journal of Management Studies*, 46(8), 1315–1338. <http://dx.doi.org/10.1111/j.1467-6486.2009.00854.x>
- Lin, C. P. (2007). To share or not to share: Modeling knowledge sharing using exchange ideology as a moderator. *Personnel Review*, 36(3), 457-475. <http://dx.doi.org/10.1108/00483480710731374>
- MacKinnon, D. P., Warsi, G. & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research*, 30, 41-62.
- Makkonen, H., Pohjola, M., Olkkonen, R. & Koponen, A. (2014). Dynamic capabilities and firm performance in a financial crisis. *Journal of Business Research*, 67(1), 2707-2719.
- McKelvie, A. & Davidsson, P. (2009). From resource base to dynamic capabilities: an investigation of new firms. *British Journal of Management*, 20, 63-80.

- Mikalef, P., Boura, M., Lekakos, G. & Krogstie, J. (2019). Big data analytics capabilities and innovation: the mediating role of dynamic capabilities and moderating effect of the environment. *British Journal of Management*, 30(2), 272-298.
- Moorman, C. (1995). Organizational market information processes: Cultural antecedents and new product outcomes. *Journal of Marketing Research*, 318-335.
- Narayanan, V. K., Colwell, K. & Douglas, F. L. (2009). Building organizational and scientific platforms in the pharmaceutical industry: A process perspective on the development of dynamic capabilities. *British Journal of Management*, 20, 25-40.
- Nunnally, J. & Bernstein, I. (1994). *Psychometric Theory 3rd edition* (MacGraw-Hill, New York).
- Olavarrieta, S. & Friedmann, R. (2007). Logo Selection and Modification Guidelines: an empirical international validation in Chile. *Estudios de Administración*, 14(1), 1-21.
- Oliinyk, V., Kozmenko, O., Wiebe, I. & Kozmenko, S. (2018). Optimal control over the process of innovative product diffusion: the case of Sony corporation. *Economics & Sociology*, 11(3), 265-285.
- Pavlou, P. A. (2002). *IT-Enabled Competitive Advantage: The Strategic Role of IT on Dynamic Capabilities in Collaborative Product Development Partnerships Dissertation Summary*. Marshall School of Business, University of Southern California.
- Pavlou, P. A. & El Sawy, O. (2006). The nature and role of dynamic capabilities: Conceptualization and measurement. *Information Systems Research*, 17(3), 198-227.
- Pavlou, P. A. & El Sawy, O. A. (2011). Understanding the elusive black box of dynamic capabilities. *Decision Sciences*, 42(1), 239-273.
- Pearson, A. W. & Ingleton, C. C. P. (1994). Measuring and improving creativity and innovation. In *Total quality measurement in the oil industry* (pp. 120-142). Springer, Dordrecht.
- Penrose, E. & Penrose, E. T. (2009). *The Theory of the Growth of the Firm*. Oxford university press.
- Peteraf, M. A. & Barney, J. B. (2003). Unraveling the resource-based tangle. *Managerial and Decision Economics*, 24(4), 309-323.
- Piening, E. P. (2013). Dynamic capabilities in public organizations: A literature review and research agenda. *Public Management Review*, 15(2), 209-245.
- Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press.
- Porter, M. E. (1989). From competitive advantage to corporate strategy. In *Readings in strategic management* (pp. 234-255). Palgrave.
- Prieto, I. M., Revilla, E. & Rodríguez-Prado, B. (2009). Building dynamic capabilities in product development: How do contextual antecedents matter?. *Scandinavian Journal of Management*, 25(3), 313-326.
- Ramírez, R., Österman, R. & Grönquist, D. (2013). Scenarios and early warnings as dynamic capabilities to frame managerial attention. *Technological Forecasting and Social Change*, 80(4), 825-838.
- Ravishankar, M. N. & Pan, S. L. (2013). Examining the influence of modularity and knowledge management (KM) on dynamic capabilities: Insights from a call center. *International Journal of Information Management*, 33(1), 147-159.

- 
- Regua, C. (2014). Product innovation and the competitive advantage. *European Scientific Journal*, 1(1), 140-157.
- Rennings, K. (2000). Redefining innovation—eco-innovation research and the contribution from ecological economics. *Ecological Economics*, 32(2), 319-332.
- Robinson, D. F., Savage, G. T. & Campbell, K. S. (2003). Organizational Learning, Diffusion of Innovation, and International Collaboration in Telemedicine. *Health Care Management Review*, 28(1), 68-79.
- Rodenbach, M. & Brettel, M. (2012). CEO experience as micro-level origin of dynamic capabilities. *Management Decision*, 50(4), 611-634, <https://doi.org/10.1108/00251741211220174>
- Schumpeter, J. A. (1939). *Business Cycles* (Vol. 1, pp. 161-174). McGraw-Hill.
- Sobel, M. E. (1982). *Asymptotic intervals for indirect effects in structural equations models*. In S. Leinhardt (Ed.), *Sociological methodology* (290-312). Jossey-Bass.
- Szulanski, G. (2000). The process of knowledge transfer: A diachronic analysis of stickiness. *Organizational Behavior and Human Decision Processes*, 82(1), 9-27.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350.
- Teece, D. J. & Pisano, G. (1994). The dynamics capabilities of firms: an introduction. *Industrial and Corporate Change*, 3(3), 537-556.
- Teece, D. J., Pisano, G. & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Ural, A. & Kılıç, İ. (2013). *Bilimsel araştırma süreci ve spss ile veri analizi*, Detay Yayıncılık, (4. baskı).
- Van Wijk, R., Jansen, J. J. & Lyles, M. A. (2008). Inter-and intra-organizational knowledge transfer: a meta-analytic review and assessment of its antecedents and consequences. *Journal of Management Studies*, 45(4), 830-853.
- Visnjic, I., Wiengarten, F. & Neely, A. (2016). Only the brave: Product innovation, service business model innovation, and their impact on performance. *Journal of Product Innovation Management*, 33(1), 36-52.
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R. & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365.
- Wang, C. L., Senaratne, C. & Rafiq, M. (2015). Success traps, dynamic capabilities and firm performance. *British Journal of Management*, 26(1), 26-44.
- Wang, C. & Hu, Q. (2020). Knowledge sharing in supply chain networks: Effects of collaborative innovation activities and capability on innovation performance. *Technovation*, 94, 1-13, 102010. <https://doi.org/10.1016/j.technovation.2017.12.002>
- Wernerfelt, B. (1995). Resource-based strategy in a stochastic model. In *Resource-Based and evolutionary theories of the firm: towards a synthesis* (pp. 133-145). Springer, Boston, MA.
- Wilden, R., Gudergan, S. P., Nielsen, B. B. & Lings, I. (2013). Dynamic capabilities and performance: strategy, structure and environment. *Long Range Planning*, 46(1-2), 72-96.

- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10, Special Issue: Why Is There a Resource-Based View? Toward a Theory of Competitive Heterogeneity), 991–995.
- Winter, S. G. (2006). Toward a neo-Schumpeterian theory of the firm. *Industrial and Corporate Change*, 15(1), 125-141.
- Wu, H., Chen, J. & Jiao, H. (2016). Dynamic capabilities as a mediator linking international diversification and innovation performance of firms in an emerging economy. *Journal of Business Research*, 69(8), 2678-2686.
- Wu, L. Y. (2006). Resources, dynamic capabilities and performance in a dynamic environment: Perceptions in Taiwanese IT enterprises. *Information & Management*, 43(4), 447-454.
- Wu, L. Y. (2010). Applicability of the resource-based and dynamic-capability views under environmental volatility. *Journal of Business Research*, 63(1), 27-31.
- Yao, Z., Yang, Z., Fisher, G. J., Ma, C. & Fang, E. E. (2013). Knowledge complementarity, knowledge absorption effectiveness, and new product performance: The exploration of international joint ventures in China. *International Business Review*, 22(1), 216-227.
- Yeung, A. H., Lo, V. H., Yeung, A. C. & Cheng, T. E. (2008). Specific customer knowledge and operational performance in apparel manufacturing. *International Journal of Production Economics*, 114(2), 520-533.
- Yu, Y., Dong, X. Y., Shen, K. N., Khalifa, M. & Hao, J. X. (2013). Strategies, technologies, and organizational learning for developing organizational innovativeness in emerging economies. *Journal of Business Research*, 66(12), 2507-2514.
- Yung-Chul, K. (2013). Learning Orientation, dynamic capabilities and performance in Korean high-tech ventures. *Advances in Management*, 6(4), 54-61.
- Zahra, S. A., Sapienza, H. J. & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies*, 43(4), 917-955.
- Zhan, W. & Chen, R. R. (2013). Dynamic capability and IJV performance: The effect of exploitation and exploration capabilities. *Asia Pacific Journal of Management*, 30(2), 601-632.
- Zhou, K. Z. & Li, C. B. (2010). How strategic orientations influence the building of dynamic capability in emerging economies. *Journal of Business Research*, 63(3), 224-231.
- Zollo, M. & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3), 339-351.

### **Beyan ve Açıklamalar (Disclosure Statements)**

1. Araştırmacıların katkı oranı beyanı / Contribution rate statement of researchers:

1. Yazar/First author %50,
2. Yazar/Second author %50

2. Yazarlar tarafından herhangi bir çıkar çatışması beyan edilmemiştir (No potential conflict of interest was reported by the authors).