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# LOGISTICS PERFORMANCE AND ABSORPTIVE CAPACITY: THE MEDIATING ROLE OF STRATEGIC AGILITY*

## *LOJİSTİK PERFORMANS VE SOĞURMA KAPASİTESİ: STRATEJİK ÇEVİKLİĞİN ARACI ROLÜ*

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**ABSTRACT**

This research aims to analyze the mediating effect of strategic agility on the relationship between absorptive capacity and logistics performance. In the research model, a connection was established between the variables and the impact on the logistics industry was revealed through a quantitative study. In the study, survey method is used as a quantitative research method. For this purpose, the data obtained by applying a survey to the managers working in logistics companies registered to the Chamber of Commerce operating in the Marmara region of Turkey was analyzed using the SPSS program. The findings show that strategic agility has a partial mediating effect on logistics performance. These results highlight the importance of organizations in today's increasingly complex and dynamic business world to gain competitive advantage not only from a static perspective, but also through the ability to react quickly and demonstrate flexibility. In this context, strategic agility can shape the relationship between absorptive capacity and logistics performance by strengthening organizations' ability to adapt to external changes.

***Keywords:*** *Strategic Agility, Logistics Performance, Absorptive Capacity, Mediating Role*.

**ÖZ**

Bu araştırma, soğurma kapasitesi ile lojistik performans arasındaki ilişkide stratejik çevikliğin aracılık etkisini analiz etmeyi amaçlamaktadır. Araştırma modelinde değişkenler arasında bağlantı kurularak lojistik sektörü üzerindeki etkisi nicel bir çalışma ile ortaya çıkarılmaya çalışılmıştır. Çalışmada; Nicel araştırma yöntemi olarak anket yöntemi kullanılmaktadır. Bu amaçla Türkiye'nin Marmara bölgesinde faaliyet gösteren ticaret odasına kayıtlı lojistik firmalarında çalışan yöneticilere anket uygulanmış ve elde edilen veriler SPSS programı kullanılarak analiz edilmiştir. Bulgular, stratejik çevikliğin lojistik performansı üzerinde kısmi aracılık etkisine sahip olduğunu göstermektedir. Bu sonuçlar, günümüzün giderek daha karmaşık ve dinamik hale gelen iş dünyasında, kuruluşların yalnızca statik bir bakış açısıyla değil, aynı zamanda hızlı tepki verme ve esneklik gösterme becerisiyle de rekabet avantajı kazanmasının önemini vurgulamaktadır. Bu bağlamda stratejik çeviklik, kuruluşların dış değişimlere uyum sağlama yeteneğini güçlendirerek soğurma kapasitesi ile lojistik performansı arasındaki ilişkiyi şekillendirebilir.

***Anahtar kelimeler:*** *Stratejik Çeviklik, Lojistik Performans, Absorbe Kapasitesi, Aracılık Rolü.*

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## 1. INTRODUCTION

The exploration of logistics performance measurement has been a recurring theme in existing literature. However, this study aims to shed light on this issue from a new perspective. Strategic agility and absorptive capacity, two contemporary and widely-discussed concepts, are gaining attention in various industries and applications, with a particular focus on the logistics sector. Strategic agility refers to the flexibility, speed, and adaptability of organizations to quickly adapt to changing conditions, seize opportunities, and gain a competitive advantage. This concept is becoming increasingly important in today's business world as companies must continuously adapt to changing market conditions to survive in a competitive environment and achieve sustainable success.

Through a comprehensive literature review, the research aims to fill gaps in the current understanding by delving into the definition, status, and contributions of absorptive capacity in enterprises, as well as the intricacies of strategic agility in organizational contexts. In this context, emphasizing the importance of strategic agility will help us understand that enhancing organizations' abilities to effectively respond to challenges in today's dynamic business environment is a critical factor.

The research methodology begins with the establishment of a conceptual framework, providing a comprehensive overview of absorption capacity, strategic agility, and their interconnectedness. The subsequent investigation involves a meticulous examination of studies on absorption capacity and strategic agility, as well as studies on the relationship between logistics performance and strategic agility. This thorough exploration culminates in the formulation of a model designed to elucidate the potential intermediary role of strategic agility.

To gauge the validity of the proposed model, a survey method was adopted, and the study was conducted accordingly. The ensuing sections of the article are thoughtfully structured to present a cohesive narrative. Section 2 delves into the theoretical foundation, elucidating the development of hypotheses that underpin the study. Section 3 provides an in-depth exposition of the research methodology employed, offering a clear depiction of the model. Section 4 meticulously presents the research results, while Section 5 encapsulates the discussion and conclusion, providing valuable insights derived from the study's findings.

## 2. LITERATURE REVIEW

An extensive literature review is conducted for the study. This section includes key concepts in the theoretical framework. Based on the resource-based view, the paper focuses on three key concepts including absorptive capacity, logistics performance, and strategic agility. Here, this paper discusses current literature as to what insight it offers for the analysis and design of absorptive capacity and its linkage to logistics performance, with the mediating role of strategic agility.

### 2.1. Absorptive Capacity

A company with high absorption capability has better learning abilities and can anticipate opportunities in the long term by broadening its vision. Thus, the concept of absorption capacity is one of the most crucial concepts emerging in the field of organizational research in recent

years. Various studies highlighted that a firm's internal learning ability enables it to create or acquire useful information. This kind of internal learning capacity is called "absorption capacity". Absorption capacity is an important learning capacity that represents a firm's ability to identify, evaluate, absorb and use information (Cohen and Levinthal, 1990). The acquired knowledge should be exploited to gain a competitive advantage; consequently, absorption is a critical step. As a result, absorption capacity (also known as diffusion) is regarded as a measure of technical solution implementation. Absorption capacity is often related with difficulties such as the implementation of new manufacturing processes, the use of new technologies, and the acquisition of new knowledge (Stachowiak et al., 2019).

The absorptive ability of a corporation is comprised of four unique but complimentary capabilities: information acquisition, knowledge assimilation, knowledge transformation, and knowledge use. It demonstrates that organizations that acquire better information have a higher absorption capacity (Tseng et al, 2019).

Based on their findings from cognitive and behavioural research areas, Cohen and Levinthal (1990) argued that organizational absorption capacity resembles individual abilities, such as interacting with new knowledge, in terms of its dependence on previous knowledge, such as shared language or recent scientific achievements in a particular field.

González-Campo and Ayala (2014) argued that considering "The combination of innovative character and culture with other internal and external sources and talent creates a greater ability to innovate", there was a relationship between organizations' innovation and absorption capacity (Moura et. al., 2018).

If a freight forwarder has a higher absorption capacity, the company can grasp the value and utility of new knowledge or technology and swiftly convert it into valuable information. Absorption capacity can also help freight forwarders develop new knowledge by strengthening organizations' ability to recombine a variety of existing and newly acquired knowledge in the most appropriate way. Even though firms have access to the same information, their level of knowledge may differ based on their absorptive ability (Lee and Song, 2018).

As a result, a company with a strong absorptive capacity can optimize organizational information benefits while also improving business performance (Tsai, 2001; Lee and Song 2015).

### 2.2. Logistics Performance

The examination of existing literature has brought to light a shortage of research focused on the concept of logistics performance. Many studies in the literature show that a significant number of studies are mostly concerned with the firm performance. Over recent decades, most of the empirical research has become more related to the importance of logistics management from certain perspectives (Amin & Shahwan, 2020).

Logistics has significant importance in both national and international trade and, thus, in the development and competitiveness of a country (Ekici et al., 2019). In this regard, Azmat (2017) noted that considering the increasing pace of world trade since 2000, the logistics sector contributes to the national output in many countries. Thus, the logistics sector accelerates the pace of trade liberalization and countries become increasingly outward oriented. According to

his study, the overall logistics performance is positively and statistically associated with exports and imports. Also, logistics performance plays a crucial role in the efficiency augmentation and competitiveness of the manufacturing industry (Nallusamy, 2021). Thus, addressing the importance of logistics performance could help countries determine where to focus projects and how to develop their performance in the most efficient way (Rezaei et al., 2018). In brief, logistics performance has an impact on trade growth (Çelebi, 2019).

According to Khan et al. (2020), firms are competing each other based on their logistics performance nowadays. Despite all this evidence, doubt remains concerning the lack of study between logistics performance and absorptive capacity. Thus, further investigation is needed to comprehend absorptive capacity and logistics performance, and thus, to reinforce the potential value within the organization.

Mohamad et al. (2018) stressed the importance of logistics innovativeness and logistics service differentiation in influencing business logistics performance. They created a model in which logistics innovation and service differentiation influence logistics performance. Furthermore, Ralston et al (2013) noted that logistics innovativeness helps logistics departments to create novel solutions to business problems and challenges, but this idea appears to be largely untapped in the literature.

Despite all this evidence, doubt remains concerning the lack of study between logistics performance and absorptive capacity. Thus, further investigation is needed to comprehend absorptive capacity and logistics performance, and thus, to reinforce the potential value within the organization.

## 3. RESEARCH HYPOTHESIS AND RESEARCH MODEL

### 3.1. Absorptive Capacity and Logistics Performance

Numerous studies in the existing literature have demonstrated that absorptive capacity yields favourable effects on both business and innovation performance, as indicated by (Kale, Aknar, & Başar, 2019). Liu et al. (2013) have contended that, from the perspective of dynamic capabilities, absorptive capacity represents a significant driver of enhanced firm performance. They examine the influence of absorptive capacity on firm performance through its influence on supply chain agility. Abareshi and Molla (2013) explore the role of absorptive capacity in the implementation of eco-friendly logistics practices and its impact on the performance of environmentally sustainable logistics.

Moreover, Volberda et al. (2010) noted that absorptive capacity spans many fields in management including strategic management, organization theory, and international business. In this regard, Tzokas et al. (2015) found that better performance ought to be expected by firms that have managed to externally hold knowledge with technological and customer relationship capability. Here, they confirmed the mediating role of absorptive capacity in the relationship between technological capability and performance.

Absorption capacity can also help freight forwarders generate new knowledge, as it strengthens firms' ability to recombine a set of knowledge most conveniently they already have and newly acquired knowledge. Even if firms have access to the same information, the degree

to which firms know may differ depending on the level of absorptive capacity they have (Lee and Song, 2018). Based on the outcomes presented in the study by Lee and Song, it is apparent that freight forwarders have the potential to amass and build knowledge, including knowledge specific to their firm, the industry, and international business, provided they enhance their internal learning capacity and maintain numerous collaborative associations with external industrial entities. The conclusions drawn from the study indicate that a higher degree of absorptive capacity and inter-firm collaborative relationships held by a freight forwarder contribute to an increased level of knowledge acquisition within the company. Conversely, Abareshi and Molla (2013) discovered that the Absorptive Capacity (AC) model is valuable for comprehending how logistics firms transition towards more environmentally friendly practices. The outcomes indicate that logistics and transportation companies should prioritize the cultivation of their absorptive capacities, a dimension that has been somewhat neglected in prior research when it comes to environmental considerations. Industry professionals should acknowledge the growing significance of environmental concerns. The study's findings underscore the necessity for logistics companies to enhance their absorptive capacity if they aim to elevate their performance in green logistics.

Absorptive capacity can contribute to reducing a company's information uncertainty and the ability to quickly grasp the usefulness of information (Cohen and Levinthal, 1990). Additionally, absorptive capacity can accelerate the effective distribution of information within an organization, aiding in the transformation of information into organizational impact (Fernhaber and Patel, 2012). Consequently, firms with high absorptive capacity can maximize their organizational knowledge advantages and enhance their business performance (Tsai, 2001).

***H1.*** *Absorptive capacity affects logistics performance positively.*

### 3.2. Absorptive Capacity and Strategic Agility

The effect of absorption capacity on strategic agility is a topic of interest in the literature, and research shows that absorption capacity capabilities affect strategic agility. Sambamurthy et al. (2003) emphasized the importance of wealth and access to information technology for agility. They argued that agile companies with information technology resources will affect the financial performance of the firm by implementing competitive practices (Sambamurthy et al. 2003).

Kohtamäki et al. (2020) introduced a strategic agility framework and strategies designed to empower companies in harnessing profitability through the synergy of entrepreneurial mindset and absorptive capacity when it comes to stimulating innovation. In their study, they observed that both entrepreneurial orientation and absorptive capacity contribute to enhancing strategic agility, innovation capabilities, and innovations in business models, firm expansion, and overall profitability.

Khan et al. (2020) argued that absorptive capacity is beneficial for firms, not only helping firms gain an advantage through new knowledge but also facilitating them to innovate strategically. According to the research results, absorption capacity has a positive effect on the relationship between social capital and strategic agility.

Supply chain agility is considered a type of operational capability that expresses a company's ability to swiftly adapt to or respond to changes in the market. Research on agility also indicates

that a company's agility is based on the information and resources it can access. This capability underscores the foundation of a company's competitive advantage lies in developing a unique operational capability like agility through the utilization of absorptive capacity (Liu et al., 2013).

The results of Liu et al.'s investigation suggest that the direct link from absorptive capacity to a company's performance remains substantial. Furthermore, the connection between absorptive capacity and firm performance is, to some extent, influenced by the mediation of supply chain agility. One plausible interpretation within this study is that the influence of IT capabilities on supply chain agility is wholly channelled through absorptive capacity. Additionally, this research delves into the dual impact of absorptive capacity on firm performance, both through direct means and indirectly by moulding supply chain agility.

The impact of the acquisition dimension of absorptive capacity on strategic agility has an indirect effect on firm performance through the mediation of strategic agility. Various factors such as changing customer and stakeholder expectations, as well as intense competition among companies in destination markets, necessitate that companies consider both absorptive capacity and strategic agility to maintain and enhance their existing market shares (Kale, Aknar, and Başar, 2019).

***H2.*** *Absorptive capacity affects strategic agility positively.*

### 3.3. Strategic Agility and Logistics Performance

A deep understanding of strategic agility is intriguing for both academicians and executives (Shams et al., 2021). Numerous research studies in the existing body of literature have highlighted the beneficial influence of strategic agility on both firm and operational performance. Ashrafi et al. (2019) sought to enhance comprehension of how firm agility and performance interrelate, particularly when confronted with environmental instability. Their emphasis was on the notion that the constructive impact of agility on performance becomes more pronounced in situations characterized by heightened turbulence.

Zielske and Held (2021) identified the advantages that both traditional logistics firms and logistics startups gain through the utilization of agile methodologies and practices.

The fact that companies have dimensions such as customer-based, brand, employee skills and infrastructure contribute to their strategic agility. Organizing and coordinating these dimensions results in firm performance (Weill, Subramani, and Broadbent, 2002). Decisions taken in management strategy are expected to increase firm performance. The relationship between strategic agility and firm performance has a positive effect on firm performance. Nurjaman et al. (2021), it was found that this effect can increase firm performance by 20.8%. Vickery et al. (2010) demonstrated a favourable impact of agility on firms' financial performance. Meanwhile, Suradi et al. (2020) explored the mediating role of strategic agility in the association between supply chain management activities and firm performance within the Indonesian textile sector, revealing the significance of this relationship.

***H3.*** *Strategic agility affects logistics performance positively.*

### 3.4. The Mediating Role of Strategic Agility

Agility is the ability to manage the losses that may occur against changes and threats at the lowest level and at the same time to take advantage of new business opportunities quickly and flexibly (Skyrius and Valentukevičė, 2020). In chaotic markets where global competition increases rapidly, demand varies frequently, industries are divided, developed, or regressed; companies have had to be agile to survive against these conditions (Teece, 2016; Sheffi, 2005 as cited in Vecchiato, 2015). The issue of agility has been handled in many stages and many different studies have been done in the literature, and these studies have been summarized in Table 1.

**Table 1:** Studies on Agility

| Organizational Agility | Production Agility | Supply Chain Agility | Strategic Agility |
|---|---|---|---|
| (Harraf, Wanasika, Tate, & Talbott, 2015)<br>(Lu & Ramamurthy, 2011)<br>(Teece, Peteraf, & Leih, 2016)<br>(Dyer & Shafer, 1998)<br>(Felipe, Roldán, & Leal-Rodríguez, 2017)<br>(Tallon & Pinsonneault, 2011)<br>(Lee, Sambamurthy, Lim, & Wei, 2015) | (Jackson & Johansson, 2003)<br>(Cao & Dowlatshahi, 2005)<br>(Jacobs, Droge, Vickery, & Calantone, 2011)<br>(Routroy, Potdar, & Shankar, 2015)<br>(Yang & Li, 2002)<br>(Yusuf, Sarhadi, & Gunasekaran, 1999) | (Lin, Chiu, & Chu, 2006)<br>(Ngai, Chau, & Chan, 2011)<br>(Wilding, Wagner, Gligor, & Holcomb, 2012)<br>(Dubey, Gunasekaran, Blome, Papadopoulos, & Childe, 2018)<br>(Gligor, Gligor, Holcomb, & Bozkurt, 2019) | (Doz & Kosonen, 2010)<br>(Weber & Tarba, 2014)<br>(Clauss, Abebe, Tangpong, & Hock, 2019)<br>(Kale, Aknar, & Başar, 2019)<br>(Shams R. , Vrontis, Belyaeva, Ferraris, & Czinkota, 2021)<br>(M.A., Asikhia, & Makinde, 2019) |

In constantly developing global economies, adapting to changing demands has become a critical life factor for companies to survive the chaotic competition market. The flexibility to face rapidly changing demands and adapt to changes by focusing on new business models and new categories is defined as the strategic agility capability in companies. Strategic agility is directly influenced by leadership and organizational design. For this reason, it is also defined as the ability to adapt the organizational structure against changes with conscious strategic moves (Weber and Tarba, 2014).

It is believed that correct but outdated practices and traditional management practices limit the strategic agility of companies, which is the ability to innovate and adapt. Examining the strategic agility framework to offer a business model renewal Doz and Kosonen (2010), identified three basic capabilities that form the basis for strategic agility (Doz and Kosonen, 2010):

1. Strategic Sensitivity
2. Leadership Unity
3. Resource Fluidity

Strategic sensitivity is the ability to have awareness and attention in strategic developments, and thus the ability to perceive opportunities and threats. In addition, the ability to make critical planning and evaluations and to produce alternatives by gaining perspectives from different colleagues. Leadership unity is the managerial sensitivity of the teams in the ability to make bold and fast decisions. Leadership unity gains importance in adapting to rapidly changing

environments. Resource fluidity is the ability to quickly redistribute and configure resources depending on flexibility. Doz and Kosonen (2010) argued that resource fluidity capability is important for reducing structural skill rigidity (Clauss et al., 2009; Doz and Kosonen, 2010).

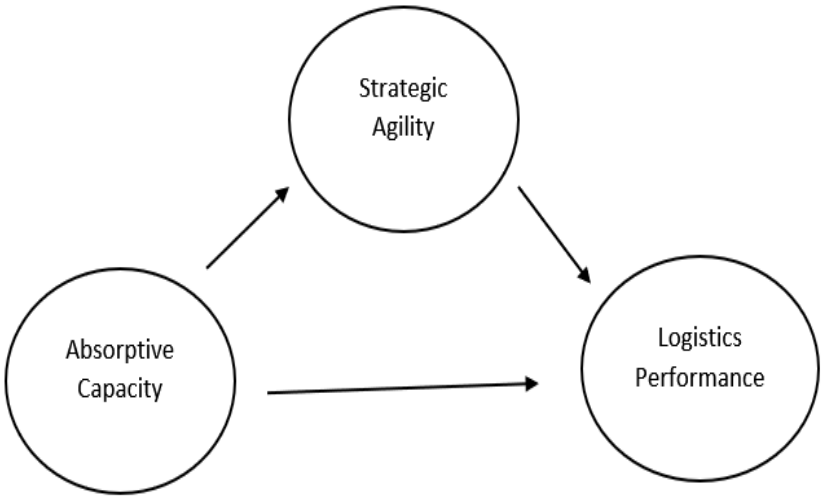
Defining strategic agility as "the capacity of making knowledgeable, nimble, rapid strategic moves with a high level of precision", Brueller et al. (2014) listed three basic capabilities that an agile organizational system should be able to do (Brueller et al., 2014):

1. Knowledgeable Sensemaking: is the first to recognize and address needs in an agile company by providing superiority in sensing and processing information with deep ecosystem involvement.
2. Nimble Decision Making: is being aware of the company's abilities based on past experiences, acting fast, acting quickly.
3. Rapid Resource Redeployment: the ability to implement fast to take advantage of opportunities.

Strategic agility has become a skill that companies have to equip today, and the main problem is whether the company can act quickly and accurately in operational terms. Systemic and corporate information technology capabilities can support fast and accurate action (Shams et al., 2021).

Considering the literature on the subject, strategic agility may mediate the effect of absorption capacity on logistics performance (Figure 1). Cegarra-Navarro et al. (2016) demonstrated the mediating role of organizational agility in the impact of knowledge application on organizational performance by examining 112 large Spanish companies. In their studies examining 190 accommodation establishments in Turkey, Kale, Aknar, and Başar (2019) revealed the mediating role of strategic agility in the relationship between absorption capacity and firm performance. Testing the relationship between supply chain management activities and operational performance with the mediator role of strategic agility, Omoush (2020) conducted its research on 16 pharmaceutical companies listed on the Amman stock exchange in Jordan. According to the results, although supply chain management activities have an impact on operational performance, this effect is partial in the mediator role of strategic agility. Khan et al. (2020) demonstrated the mediating role of strategic agility in the relationship between social capital and strategic renewal on SMEs in Pakistan. Haider and Kayani (2021), who examined the relationship between customer information management capability and project performance in Pakistan's project-based software companies with the mediator role of strategic agility, found that strategic agility plays a positive and important mediating role between customer information management capability and project performance.

***Figure 1.*** The proposed research model.




Strategic agility may have a role in the impact of absorption capacity on logistics performance, so the hypothesis of the study is suggested as follows.

***H4.*** *Strategic agility mediates the relationship between absorptive capacity and firm performance.*

## 4. RESEARCH METHODOLOGY

### 4.1. Sampling and Data Collection

In this study, 208 people were surveyed and experts and assistant experts working in the logistics sector were selected as a sample. Respondents were contacted via LinkedIn and asked to answer the online questionnaire.

### 4.2. Scales

First, the literature was reviewed to prepare a web survey directed to the company's senior executives from a selected population of companies operating in Turkey. Selected population, agriculture, forestry and fisheries, mining and quarrying, manufacturing, electricity, gas and water, construction and public works, wholesale and retail trade, restaurants and hotels, transportation, storage and communication, financial institutions, education, health, sports and other social services, professional, scientific and technical activities, administrative and support service activities, real estate activities and companies engaged in related activities. The data were sent to the participants via LinkedIn by creating an online survey. Experts, assistant experts, or senior managers in the mentioned sectors were asked to answer the questionnaire and 208 participants were reached.

After a comprehensive literature review, the scales required to develop the questionnaire were used for the scale of Zahra and George, (2002) for absorptive capacity, Hock et al., (2016) for strategic agility, and Fugate and Mentzer (2010) for logistics performance. Absorption capacity includes 4 dimensions: acquisition, assimilation, transformation, and exploitation.

Strategic agility consists of 5 dimensions: strategic sensitivity, leadership unity, resource fluidity, agility, and flexibility. The 4 dimensions of logistics performance are listed as logistics performance, logistics efficiency, logistics differentiation, and logistics effectiveness. Participants were asked to indicate their level of agreement with statements about logistics performance in their organization. A 5-point Likert scale type was used to evaluate the degree of participants' agreement with the measurement items.

## 5. RESEARCH FINDINGS

First, the distribution of the data collected in the study was examined. While the normality distribution values of the strategic agility scale were determined as Skewness (-1.521) and Kurtosis (1.858); the normality distribution values of the absorptive capacity scale were determined as Skewness (-1,630) and Kurtosis (2,123). Considering the logistics performance scale; Skewness (-1.580) and Kurtosis (2.142) were observed. According to George & Mallery, 2010, skewness and kurtosis values between -2 to +2 is acceptable. It can be noted that values of skewness and kurtosis fall within the acceptable range of -2 to +2, indicating that the data is fairly normal, and the basic assumption of parametric testing is fulfilled.

Secondly, explanatory factor analysis was performed. The Absorption Capacity scale Keiser-Meyer-Olkin (KMO) value was found to be 0.937. Accordingly, it was determined that the sample adequacy was “very good”. Although the absorptive capacity scale consisted of 4 factors, it was revealed that it was combined into a single dimension. This factor load was observed as 8.414 and it was observed that it explained 60.10% of the total variance. In addition, Cronbach's Alpha analysis was performed to determine the reliability of the scale, and the reliability of the scale was found to be $\alpha$=0.948. A Cronbach's Alpha value of 0.70 and above indicates that the scale is "very reliable” (Büyüköztürk, 2018).

Explanatory Factor Analysis (EFA) was conducted to determine the construct validity of the logistic performance scale, which is the other scale used in the study, and to reveal the factor structures. The Keiser-Meyer-Olkin (KMO) value was found to be 0.950. When factor analysis was performed for the logistic performance scale, it was determined that the items explained 67.458% of the population and gathered in 3 factors. It was seen that the load of the first dimension was 13,239 and explained 55.163% of the total variance, the factor load of the second dimension was 1.810 the factor loading of the total variance was 7.541, and the factor load of the third dimension was 1.141 and explained 4.753% of the total variance. In addition, as a result of Cronbach's Alpha analysis, the reliability of the scale was found to be $\alpha$=0.964.

The KMO value of the strategic agility scale was observed as 0.953. The total variance table explained showed that the items converged in 3 dimensions. The factor load of the first dimension is 12,957 and the variance explained is 56,333%. The factor load of the second dimension is 1.477 and the variance explained is 6.422%, and the factor loading of the third dimension is 1.062 and the variance explained is 4.618%. When Cronbach's Alpha analysis was performed on this scale, the reliability of the scale was found to be $\alpha$=0.964. With this result, it was concluded that all 3 scales were reliable.

After this stage, Pearson Correlation Analysis was used to determine the relationship between absorption capacity and strategic agility. Analysis results are shown in Table 2.

**Table 2:** Absorption Capacity and Strategic Agility Pearson Correlation Analysis Results

| | | | Strategic Agility |
|---|---|---|---|
| Pearson Correlation | Absorption Capacity | Correlation Coefficient | .888** |
| | | Sig. (2-tailed) | .000 |
| | | N | 208 |

A strong positive (r=0.888) and significant (p<0.05) relationship was found between absorption capacity and strategic agility. The variance explained by the variables on each other is 57%. In other words, 57% of strategic agility may be due to absorption capacity.

**Table 3:** Absorption Capacity and Logistics Performance Pearson Correlation Analysis Results

| | | | Logistics Performance |
|---|---|---|---|
| Pearson Correlation | Absorption Capacity | Correlation Coefficient | .881** |
| | | Sig. (2-tailed) | .000 |
| | | N | 208 |

A strong positive (r=0.881) and significant (p<0.05) relationship was found between absorption capacity and logistics performance. The variance explained by the variables on each other is 46%. In other words, 46% of logistics performance may be due to absorption capacity.

**Table 4:** Strategic Agility and Logistics Performance Pearson Correlation Analysis Results

| | | | Logistics Performance |
|---|---|---|---|
| Pearson Correlation | Strategic Agility | Correlation Coefficient | .902** |
| | | Sig. (2-tailed) | .000 |
| | | N | 208 |

A strong positive (r=0.902) and significant (p<0.05) relationship was found between Strategic Agility and logistics performance. The variance explained by the variables on each other is 54%. In other words, 54% of logistics performance may be due to strategic agility.

Third, Hayes Process Analysis was conducted to determine whether strategic agility has a mediating effect on the relationship between logistics performance and absorption capacity. In Figure 2, firstly, the findings regarding the effect of absorption capacity on logistics performance are given without including the strategic agility variable in the model.

**Figure 2.** The Effect of Absorption Capacity on Logistics Performance without Including the Strategic Agility Variable In The Model

| **OUTCOME VARIABLE: LOGISTICS PERFORMANCE** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Model Summary** | | | | | | | |
| | **R** | **R-sq** | **MSE** | **F** | **df1** | **df2** | **p** |
| | ,8806 | ,7754 | ,1860 | 711,0713 | 1,0000 | 206,0000 | ,0000 |
| **Model** | | | | | | | |
| | **coeff** | **se** | **t** | **p** | **LLCI** | **ULCI** | |
| **constant** | ,6392 | ,1246 | 5,1293 | ,0000 | ,3935 | ,8849 | |
| **Absorptive Capacity** | ,8309 | ,0312 | 26,6659 | ,0000 | ,7695 | ,8923 | |
| **Standardized Coefficients** | | | | | | | |
| | **coeff** | | | | | | |
| **Absorptive Capacity** | ,8806 | | | | | | |

Accordingly, the effect of absorption capacity (X) on logistics performance (Y) was found to be significant. (p=0.000) and the regression equality between the variables was determined as y=0.6392+0.8309x. Accordingly, 1 point increase in X causes Y to increase by 0.830 points, and this increase is significant. In addition, the Beta coefficient was found to be 0.8806, and this finding showed that there was a positive relationship between X and Y, and that X explained 77.5% of the change in Y. These findings showed that one of the prerequisites of the mediation analysis, the necessity of having a significant effect of X on Y before the variable M is included in the model is met.

In the second stage, when the variable M was included in the model, the findings showing the effect of X on M and the findings showing the effects of X and M on Y were examined. Because when M is included in the model in order to talk about the mediation effect; X must have a significant effect on M, M must have a significant effect on Y, and the direct effect of X on Y must be insignificant (Baron and Kenny, 1986). Figure 3 shows the findings related to these.

**Figure 3.** Findings when M was included in the model.

| **OUTCOME VARIABLE: STRATEGIC AGILITY** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Model Summary** | | | | | | | |
| | **R** | **R-sq** | **MSE** | **F** | **df1** | **df2** | **p** |
| | ,8883 | ,7891 | ,1922 | 770,9452 | 1,0000 | 206,0000 | ,0000 |
| **Model** | | | | | | | |
| | **coeff** | **se** | **t** | **p** | **LLCI** | **ULCI** | |
| **constant** | ,4740 | ,1267 | 3,7341 | ,0002 | ,2233 | ,7228 | |
| **Absorptive Capacity** | ,8795 | ,0317 | 27,7657 | ,0000 | ,8170 | ,9419 | |
| **Standardized Coefficients** | | | | | | | |
| | **coeff** | | | | | | |
| **Absorptive Capacity** | ,8883 | | | | | | |
| **OUTCOME VARIABLE: LOGISTICS PERFORMANCE** | | | | | | | |
| **Model Summary** | | | | | | | |
| | **R** | **R-sq** | **MSE** | **F** | **df1** | **df2** | **p** |
| | ,9183 | ,8433 | ,1304 | 551,4986 | 2,0000 | 205,0000 | ,0000 |
| **Model** | | | | | | | |
| | **coeff** | **se** | **t** | **p** | **LLCI** | **ULCI** | |
| **constant** | ,3834 | ,1078 | 3,5556 | ,0005 | ,1708 | ,5959 | |
| **Absorptive Capacity** | ,3552 | ,0568 | 6,2521 | ,0000 | ,2432 | ,4673 | |
| **Strategic Agility** | ,5409 | ,0574 | 9,4241 | ,0000 | ,4277 | ,6540 | |
| **Standardized Coefficients** | | | | | | | |
| | **coeff** | | | | | | |
| **Absorptive Capacity** | ,3765 | | | | | | |
| **Strategic Agility** | ,5675 | | | | | | |

According to the results in Figure 3; The direct effect from absorb capacity to strategic agility was positive and statistically significant (b= 0,8795 and se= 0,0317, p<0,001) And the regression equation between the variables was determined as m=0.4730+0.8795x. Accordingly, 1 point increase in X causes M to increase by 0.8795 points, and this increase is significant. In addition, the Beta coefficient was found to be 0.8883 and this finding showed that there was a positive relationship between X and M and that X explained 78.9% of the change in M. Also, the direct effect from strategic agility to logistics performance was positive and statistically significant. (b= 0,5409 and se= 0,0574 , p<0,001). And the regression equation between the variables was determined as y=0.3834+0.5409m. Accordingly, 1 point increase in M causes Y to increase by

0.5409 points, and this increase is significant. In addition, the Beta coefficient was found to be 0.5675, and this finding showed that there was a positive relationship between Y and M. When these findings are evaluated together with the fact that there is a significant relationship between X and M, it has been shown that the relationship starting from X and continuing through M and reaching Y is significant (p<0,05). However, to M to be considered as a mediator variable, the direct effect of X on Y is expected to turn negative when M is included in the relationship (p<0.05). In other words, the effect of X on Y must occur only through M. When Figure 3 is examined, it is seen that the effect of X on Y is still significant (p=0.000). Therefore, it has been determined that X **is not a "fully mediated variable"**. In addition, Figure 4 shows the findings regarding the total, direct and indirect effects of X on Y.

**Figure 4.** Findings on the total, direct and indirect effects of X on Y

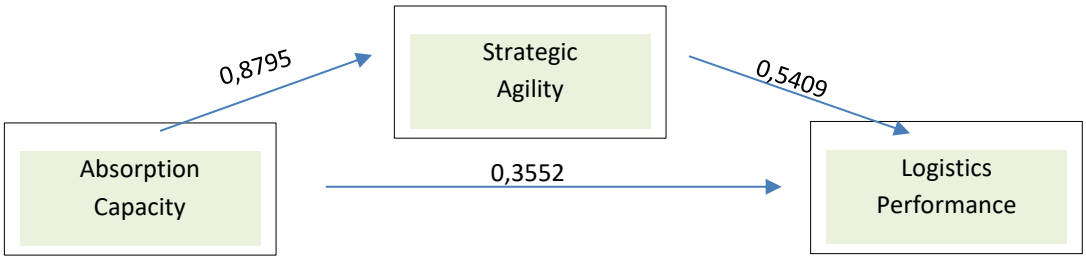
| TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Total Effect of X on Y** | | | | | | | |
| **Effects** | **se** | **t** | **p** | **LLCI** | **ULCI** | **c_cs** | |
| **,8309** | ,0312 | 26,6659 | ,0000 | ,7695 | ,8923 | ,8806 | |
| **Direct Effect of X on Y** | | | | | | | |
| **Effects** | **se** | **t** | **p** | **LLCI** | **ULCI** | **c_cs** | |
| **,3552** | ,0568 | 6,2521 | ,0000 | ,2432 | ,4673 | ,3765 | |
| **Indirect effect (s) of X on Y:** | | | | | | | |
| | **Effect** | | **BootSE** | **BootLLCI** | **BootULCI** | | |
| **Strategic agility** | ,4757 | | ,0698 | ,3440 | ,6195 | | |
| **Completely standardized indirect effect(s) of X on Y** | | | | | | | |
| | **Effect** | | **BootSE** | **BootLLCI** | **BootULCI** | | |
| **Strategic agility** | ,5041 | | ,0678 | ,3744 | ,6387 | | |

The total effect line in Figure 4 shows the findings regarding the effect of X on Y before the M variable was included in the model. In this case, the effect of X on Y is significant (p=0.000) and the regression coefficient showing the strength of the effect was found to be 0.8309. The direct effect line shows the findings regarding the effect of X on Y after the variable M is included in the model. In this case, the effect of X on Y is still significant (p=0.000) and the regression coefficient showing the strength of the effect was found to be 0.3552. Therefore, when M is included in the model, the direct effect of X on Y does not become meaningless. However, the strength of the relationship has waned. The coefficient of 0.4757 in the Indirect effect line shows the decreasing power. Based on these findings, our study showed that M is a "partial mediating variable".

The direct effect from absorb capacity to logistics performance was positive and statistically significant. (b= 0,3552 and se= 0,0568 , p<0,001).

The examination of the indirect effect is conducted through non-parametric bootstrapping. When the null hypothesis of zero falls within the range defined by the lower and upper bounds of the 95% confidence interval, it indicates that the indirect effect within the population is considered to be zero. On the other hand, if zero is located outside of this confidence interval, it suggests that the indirect effect is statistically non-zero. In this particular instance, the indirect effect (IE = 0.4757) is statistically significant, 95%CI= (.3440, .6195)

**Figure 5.** Mediating role of Strategic Agility




Looking at the results, it has been revealed that strategic agility has a partial mediator effect. Accordingly, the H4 hypothesis was accepted.

## 6. DISCUSSION AND CONCLUSION

In this study, the mediating effect of strategic agility, which is a current issue, on logistics performance was investigated. The effect of absorbing capacity on logistics performance or the effect of agility on logistics performance has been the subject of research, but the mediation effect between the absorption capacity of strategic agility and logistics performance creates a gap in the literature. Andrew F. Hayes's (2013) Process macro plugin was used to calculate the effect of mediation. Model 4 is used here. In the first stage, it showed that there is a positive relationship between X (absorbing capacity) and Y (logistics performance) and that X explained 77.5% of the change in Y. It can be said that the absorption capacity of an organization, which is the ability to identify, absorb and apply new and external information for commercial purposes, has a positive effect on logistics performance. In the second stage, the effect of X (absorbing capacity) on M (strategic agility) was significant and positive. In addition, the effect of M on Y is also significant and positive. That is, hypotheses H1, H2 and H3 were accepted. In this case, the regression coefficient showing the strength of the effect of X on Y was found to be 0.8309, while the regression coefficient showing the strength of the effect of X on Y was 0.3552 after the M variable was included in the model. The results showed that the direct effect of X on Y did not become meaningless when M was included in the model, only the strength of the relationship decreased. Based on these findings, our study showed that M is a “partial mediating variable”. In other words, the relationship between absorption capacity and logistics performance can also be affected by the strategic agility factor. This indicates that the ability of organizations to adapt rapidly to changing market conditions plays an important mediator role in the relationship between absorption capacity and logistics performance.

These results highlight the importance of organizations gaining competitive advantage not only with a static point of view, but also with the ability to react quickly and demonstrate flexibility, in today's increasingly complex and dynamic business world. In this context, strategic agility can shape the relationship between absorption capacity and logistics performance by strengthening the ability of organizations to adapt to external changes.

In conclusion, this study provides an important perspective on how businesses can adapt more effectively to changing conditions, by illuminating the complexity of the relationship

between absorption capacity, strategic agility and logistics performance. In future research, examining similar relationships in different sectors and cultural contexts will contribute to a deeper understanding of this field.

## REFERENCES

Afonso, Ashrafi A., Ravasan, Z. A., Trkman, P., Afshari, S. (2019). The role of business analytics capabilities in bolstering firms' agility and performance, International Journal of Information Management, 47, 1-15, https://doi.org/10.1016/j.ijinfomgt.2018.12.005.

Abareshi, A., Molla, A. (2013), Greening logistics and its impact on environmental performance: an absorptive capacity perspective, International Journal of Logistics Research and Applications, 16:3, 209-226, DOI: 10.1080/13675567.2013.812193.

Amin, H. & Shahwan, T. (2020). Logistics management requirements and logistics performance efficiency: the role of logistics management practices - evidence from Egypt. International Journal of Logistics Systems and Management. 35. 1. 10.1504/IJLSM.2020.103859.

Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182. https://doi.org/10.1037/0022-3514.51.6.1173.

Büyüköztürk, Ş. (2018). Sosyal bilimler için veri analizi el kitabı (24. bs). Ankara: Pegem Akademi Yayıncılık. https://doi.org/10.14527/9789756802748.

Brueller, N. N., Carmeli, A., & Drori, I. (2014). How Do Different Types of Mergers and Acquisitions Facilitate Strategic Agility? California Management Review, 56(3), 39-57.

Camisón, C. and Forés, B. (2010). Knowledge absorptive capacity: New insights for its conceptualization and measurement, Journal of Business Research, 63, 7, 707-715, https://doi.org/10.1016/j.jbusres.2009.04.022.

Cao, Q., & Dowlatshahi, S. (2005). The impact of alignment between virtual enterprise and information technology on business performance in an agile manufacturing environment. Journal of Operations Management, 531-550.

Cegarra-Navarro, J.-G., Soto-Acosta, P., & Wensley, A. (2016). Structured knowledge processes and firm performance: The role of organizational agility. Journal of Business Research, 69(5), 1544-1549.

Christopher, M. (2000). The Agile Supply Chain: Competing in Volatile Markets, Industrial Marketing Management, 29, 1, 37-44, https://doi.org/10.1016/S0019-8501(99)00110-8.

Clauss, T. & Abebe, M. & Tangpong, C. & Hock-Döpgen, M. (2019). Strategic Agility, Business Model Innovation, and Firm Performance: An Empirical Investigation. IEEE Transactions on Engineering Management. PP. 1-18. 10.1109/TEM.2019.2910381.

Cohen, Wesley & Levinthal, Daniel. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. Administrative Science Quarterly. 35. 128-152. 10.2307/2393553.

Çelebi, Dilay. (2019). The role of logistics performance in promoting trade. Maritime Economics & Logistics. 21. 10.1057/s41278-017-0094-4.

Doz, Y. L., & Kosonen, M. (2010). Embedding Strategic Agility A Leadership Agenda for Accelerating Business Model Renewal. Long Range Planning, 43, 370-382.

Dubey, R., Gunasekaran, A., Blome, C., Papadopoulos, T., & Childe, S. (2018). Supply chain agility,

adaptability and alignment. International Journal of Operations & Production Management.

Dyer, L., & Shafer, R. (1998). From human resource strategy to organizational effectiveness: Lessons from research on organizational agility.

Ekici, Ş. Ö., Kabak, Ö., & Ülengin, F. (2019). Improving logistics performance by reforming the pillars of Global Competitiveness Index. Transport Policy, 81, 197-207.

Felipe, C. M., Roldán, J. L., & Leal-Rodríguez, A. L. (2017). Impact of organizational culture values on organizational agility. Sustainability, 9(12), 2354.

Fernhaber, Stephanie & Patel, Pankaj. (2012). How do young firms manage product portfolio complexity? The role of absorptive capacity and ambidexterity. Strategic Management Journal. 33. 10.1002/smj.1994.

Fugate, B., & Mentzer, J. (2010). Logistics Performance: Efficiency, Effectiveness, And Differentiation. Journal of Business Logistics , 43-62.

Gligor, D., Gligor, N., Holcomb, M., & Bozkurt, S. (2019). Distinguishing between the concepts of supply chain agility and resilience. The International Journal of Logistics Management.30. 467-487. 10.1108/IJLM-10-2017-0259.

Gonzalez-Campo & Ayala (2014), Influencia de la capacidad de absorción sobre la innovación: un análisis empírico en las mipymes colombianas, Estudios Gerenciales, issue , number 11989, https://EconPapers.repec.org/RePEc:col:000129:011989.

Haider, S. A., & Kayani, U. (2021). The impact of customer knowledge management capability on project performance-mediating role of strategic agility. Journal of Knowledge Management, 25(2), 298-312.

Harraf, A., Wanasika, I., Tate, K., & Talbott, K. (2015). Organizational agility. Journal of Applied Business Research, 31, 675-686.

Hock, M., Clauss, T., & Schulz, E. (2016). The impact of organizational culture on a firm's capability to innovate the business model.R&D Management, 46-3, 433-450.

Jackson, M., & Johansson, C. (2003). An agility analysis from a production system perspective. Integrated Manufacturing Systems. 14. 482-488. 10.1108/09576060310491342.

Jacobs, M., Droge, C., Vickery, S., & Calantone, R. (2011). Product and process modularity's effects on manufacturing agility and firm growth performance. ournal of product innovation management, 28(1), 123-137.

Kale, E., Aknar, A., & Başar, Ö. (2019). Absorptive capacity and firm performance: The mediating role of strategic agility. International Journal of Hospitality Management, 276-283.

Khan, S. H., Yasir, M., & Majid, A. (2020). Strategic renewal of SMEs:the impact of social capital,strategic agility and absorptive capacity. Management Decision.

Kohtamäki, M., Heimonen, J., Sjödin, D., & Heikkilä, V. (2020). Strategic agility in innovation: Unpacking the interaction between entrepreneurial orientation and absorptive capacity by using practice theory. Journal of Business Research, 12-25.

Lee, Eon-Seong & Song, Dong-Wook. (2018). Knowledge management in freight forwarding as a logistics intermediator: model and effectiveness. Knowledge Management Research & Practice. 16. 1-9. 10.1080/14778238.2018.1475848.

Lee, O., Sambamurthy, V., Lim, K. H., & Wei, K. K. (2015). How does IT ambidexterity impact organizational agility? Information Systems Research, 26(2), 398-417.

Lin, C.-T., Chiu, H., & Chu, P.-Y. (2006). Agility index in the supply chain. International Journal of production economics, 100(2), 285-299.

Liu, H., Ke, W., Wei, K. K., Hua, Z. (2013). The impact of IT capabilities on firm performance: The mediating roles of absorptive capacity and supply chain agility, Decision Support Systems, 54, 3, https://doi.org/10.1016/j.dss.2012.12.016.

Lu, Y., & Ramamurthy, K. (2011). Understanding the link between information technology capability and organizational agility: An empirical examination. MIS quarterly, 931-954.

M.A., A., Asikhia, O., & Makinde, G. (2019). Strategic Agility and Firm Performance: The Moderating Role of Organisational Culture. Business Management Dynamics, 9(3), 1-12.

Mentzer, J. T., Min, S. and Michelle Bobbitt, L. (2004). Toward a unified theory of logistics. International Journal of Physical Distribution & Logistics Management, 34(8), 606-627.

Mohamad, M.F. & Udin, Zulkifli & Sharif, Kamal Imran. (2018). Inventory, warehousing and transportation management impacts towards logistics performance in supply chain management. International Journal of Supply Chain Management. 7. 296-299.

Moura, Dulcineia & Silva, Maria & Duarte, Filipe & Carvalho, João & Kahilana, Orlando. (2018). Absorptive capacity and cooperation evidence in innovation from public policies for innovation. International Journal of Innovation Science. 11. 10.1108/IJIS-05-2017-0051.

Nallusamy, S. (2021), Performance Measurement on Inventory Management and Logistics Through Various Forecasting Techniques [J]. Int J Performability Eng, 17(2): 216-228.

Ngai, E. W., Chau, D., & Chan, T. (2011). Information technology, operational, and management competencies for supply chain agility: Findings from case studies. The Journal of Strategic Information Systems, 20(3), 232-249.

Nurjaman, R., Rahayu, A., Wibowo, L., & Widjajani. (2021). The role of strategic agility towards the firm performance of logistics service providers in Indonesia. Management Science Letters, 11, 965–974.

Omoush, M. M. (2020). Investigation the Relationship Between Supply Chain Management Activities and Operational Performance: Testing the Mediating Role of Strategic Agility A Practical Study on the Pharmaceutical Companies. International Business Research, 13(2), 74-89.

Rezaei, S., Potdar, P., & Shankar, A. (2015). Measurement of manufacturing agility: a case study. Measuring Business Excellence. 19. 1-22. 10.1108/MBE-06-2014-0018.

Routroy, S., Potdar, P., & Shankar, A. (2015). Measurement of manufacturing agility: a case study. Measuring Business Excellence.

Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms. MIS Quarterly, 237-263.

Shams, R., Vrontis, D., Belyaeva, Z., Ferraris, A., & Czinkota, M. (2021). Strategic agility in international business: A conceptual framework for “agile” multinationals. ournal of International Management, 27(1), 100737.

Skyrius, R., & Valentukevičė, J. (2020). Business Intelligence Agility, Informing Agility and Organizational Agility: Research Agenda. Informacijos mokslai, 90, 8-25.

Suradi, Mahrinasari, M., & Hasnawati, S. (2020). The Mediating Effect of Strategic Agility in the Relationship of Supply Chain Management Activities and Firm Performance of the Textile

Industry of Indonesia. Int. J Sup. Chain. Mg, 9(3), 649-656.

Stachowiak, Agnieszka & Adamczak, Michał & Hadas, Lukasz & Domañski, R. & Cyplik, Piotr. (2019). Knowledge Absorption Capacity as a Factor for Increasing Logistics 4.0 Maturity. Applied Sciences. 9. 5365. 10.3390/app9245365.

Tallon, P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. MIS quarterly, 463-486.

Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. alifornia management review, 58(4), 13-35.

Tsai, W. (2001). Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. The Academy of Management Journal, 44(5), 996–1004. https://doi.org/10.2307/3069443.

Tseng, Ming-Lang & Lim, Ming K & Wu, Kuo-Jui & Wp, Wong. (2019). Improving sustainable supply chain capabilities using social media in a decision-making model. Journal of Cleaner Production. 227. 10.1016/j.jclepro.2019.04.202.

Tzokas, Nikolaos & Kim, Young-Ah & Akbar, Hammad & Al-Dajani, Haya. (2015). Absorptive capacity and performance: The role of customer relationship and technological capabilities in high-tech SMEs. Industrial Marketing Management. 47. 10.1016/j.indmarman.2015.02.033.

Vecchiato, R. (2015). Creating value through foresight: First mover advantages and strategic agility. Technological Forecasting & Social Change, 101, 25-36.

Vickery, S., Droge, C., Setia , P., & Sambarmurthy, V. (2010). Supply chain information technologies and organisational initiatives: complementary versus independent effects on agility and firm performance. International Journal of Production Research, 48(23), 7025-7042.

Volberda, H. W., Foss, N. J., & Lyles, M. A. (2010). Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. Organization Science, 21(4), 931–951. http://www.jstor.org/stable/40792483.

Weber, Y., & Tarba, S. Y. (2014). Strategic Agility: A State of Art. California Management Review, 56(3), 5-12.

Weill, P., Subramani, M., & Broadbent, M. (2002). IT infrastructure for strategic agility. Social Science Research, 329.

Wilding, R., Wagner, B., Gligor, D., & Holcomb, M. (2012). Understanding the role of logistics capabilities in achieving supply chain agility: a systematic literature review. Supply Chain Management: An International Journal. Vol. 17, No. 4, pp. 438-453.

Yang, S. L., & Li, T. (2002). Agility evaluation of mass customization product manufacturing. Journal of Materials Processing Technology, 129, 640-644.

Yusuf, Y. Y., Sarhadi, M., & Gunasekaran, A. (1999). Agile manufacturing:: The drivers, concepts and attributes. International Journal of production economics, 62(1-2), 33-43.

Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. The Academy of Management Review, 27(2), 185-203. https://doi.org/10.2307/4134351.

Zielske, M. & Held, T. (2021), Application of agile methods in traditional logistics companies and logistics startups: Results from a German Delphi Study, Journal of Systems and Software, 177, 110950, https://doi.org/10.1016/j.jss.2021.110950.