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Araştırma Makalesi/Research Article

# Interaction of Environmental Uncertainty, Organisational Ambidexterity and Performance in Public and Private Healthcare Organisations<sup>1</sup>

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Kamu ve Özel Sağlık Kuruluşlarında Çevresel Belirsizlik, Örgütsel Ustalık ve Performans Etkileşimi	Interaction of Environmental Uncertainty, Organisational Ambidexterity and Performance in Public and Private Healthcare Organisations			
Öz	Abstract			
Bu çalışmanın amacı, sağlık kuruluşlarında çevresel belirsizlik, örgütsel performans ve örgütsel ustalık etkileşimini incelemektir. Orta Karadeniz Bölgesi'ndeki kamu ve özel hastanelerde çalışan 266 yöneticiye anket uygulanmıştır. Çalışmada nicel araştırma yöntemi kullanılmıştır. Araştırmada veriler yüz yüze ve çevrim içi (Google Form aracılığıyla) anket tekniği ile toplanmıştır. Verilerin analizinde SPSS ve AMOS programları ile analiz edilmiştir. Sonuçlar, sağlık kuruluşları yöneticilerinin algıladıkları çevresel belirisizliğin hastane performansı üzerindeki etkisinde örgütsel ustalığın aracılık etkisini göstermiştir. Bu nedenle, hastanelerin çevresel belirsizlik ve yoğun rekabet ortamında etkin olabilmeleri için örgütsel ustalık stratejilerini benimsemeleri önerilmektedir.	This study examines the interaction of environmental uncertainty, organizational performance, and organizational ambidexterity in healthcare organizations. A questionnaire was applied to 266 managers working in public and private hospitals in the Central Black Sea Region. A quantitative research method was used in the study. Data were collected through face-to-face and online (via Google Forms) questionnaire techniques. The data were analyzed using SPSS and AMOS programs. The results showed the mediating effect of organizational mastery on the effect of environmental uncertainty perceived by health institution managers on hospital performance. Therefore, it is recommended that hospitals adopt organizational mastery strategies to be effective in dealing with environmental uncertainty and intense competition.			
Anahtar Kelimeler: Algılanan Çevresel Belirsizlik, Örgütsel Performans, Örgütsel Ustalık, Stratejik Yönetim, Hastane	<b>Keywords:</b> Perceived Environmental Uncertainty, Organizational Performance, Organizational Ambidexterity, Strategic Management, Hospital			
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## 1. Introduction

Hospitals operating in the health sector are institutions that are constantly changing, where temporal delays can have negative consequences in the long term. They have been in an interaction with the dynamics where they are located. For this reason, today's hospital managers must carefully follow the environmental changes, carefully follow the environmental changes experienced, and develop and implement the best strategies for the changing environmental conditions to manage their hospitals effectively and efficiently. Health institutions have a structure consisting of systems and subsystems with more complex and intense connections within all sectors (Bayer and Cengiz, 2020). This situation causes the health sector to become more uncertain and turbulent (Begun and Heatwol, 1999). Hospitals, which constitute a significant part of the health sector, must provide high-quality services to continue their activities while keeping costs low. Additionally, because of the increasing trend in healthcare expenditures, there is a need to focus on evaluating and improving hospital efficiency. Hospital managers' environmental perceptions may be necessary in facilitating decision-making in an uncertain environment (Hammad et al., 2013). The uncertainty of the environment causes fluctuations in all business sectors, including hospitals' performance in the healthcare industry. With this perspective, the ability of firms to modify quickly in an unpredictable environment is critical to their performance (March, 1991). In a highly uncertain environment, managers must promptly address sudden market issues, requiring swift decisionmaking and adaptive strategies to maintain stability and competitiveness (Jansen et al., 2009). Organizations that want to continue their activities and be successful need to pay attention to the concept of performance. Thus, organizational performance has become vital for all organizations, including hospitals. Hospitals achieve high performance by running all activities efficiently, enabling them to gain a competitive advantage through optimized operations, highguality care, and enhanced patient satisfaction (Najmi et al., 2018). Continuous performance, pursuing new pursuits and discoveries, and making the most appropriate use of existing capabilities are the primary purposes of strategies, which are determined on this basis. The resource-based view predicts that businesses can identify resources and capabilities that connect the perception of organizational performance with environmental uncertainty, thereby enhancing their strategic positioning and competitiveness (Bamel & Bamel, 2018). When a business adopts effective practices for its environment, it can minimize costs and advance organizational performance (Christmann, 2000). The resource-based view suggests that environmental uncertainty can effectively enhance organizational performance by leveraging unique resources and capabilities (Sabherwal et al., 2019). The resource-based view defines organizations as collections of resources that, when effectively utilized, enable them to achieve and sustain a competitive advantage. It explains strategies for leveraging these resources to gain and maintain market superiority (Elbanna & Abdel-Maksoud, 2019). Rapidly changing environmental conditions and increasing competitive pressures force businesses to implement different strategic alternatives such as organizational ambidexterity (Cingöz and Akdoğan, 2015).

An argument that has been discussed and drawn greater attention is that businesses can achieve superior competitive advantage with organizational ambidexterity strategies (Burgess et al., 2015). Organizational ambidexterity means the full range of knowledge and capabilities that allow businesses to manage activities effectively and leverage assets for optimal benefits (Hughes et al., 2020). Organizational ambidexterity is the ability to simultaneously manage and integrate both existing and new talent, competencies, and knowledge. Therefore, it enables connections between old and new technologies and complementary resources (Veider & Matzler, 2016). Organizational ambidexterity is also expressed as the skills managers provide to give the company a competitive advantage (Yıldız & Karataş, 2018). Critical capabilities are necessary to respond to evolving environmental and competitive conditions and to achieve strategic objectives. Hospitals, like any other business, need to adapt well to the environment, match strengths with opportunities, and manage to align different management practices with the chosen strategy.

The existing literature includes numerous empirical studies examining hospital performance across different countries and their various operational and management aspects (Azar et al., 2016; Nguyen et al., 2021; Reis and Spencer, 2019). However, there is a lack of evidence regarding the relationship between hospital performance and environmental uncertainty, requiring further investigation. Research indicates that there is a direct relationship between performance and environmental uncertainty. Managers faced with high environmental uncertainty may be more likely to increase their organizational performance goals (Lo, 2013; Nguyen et al., 2021). However, there are limited studies suggesting that there is no general relationship between organizational performance and perception of environmental uncertainty (Elbanna & Alhwarai, 2012; Hicks, 2019). Therefore, it has been considered that intense environmental uncertainty may pose a risk to the performance of hospitals, and managers can accept these risks and make predictions with the signals they receive from the environment. Environmental performance is a variable of corporate performance. (Magerakis & Habib, 2021). Managers need environmental perceptions and reliable information to overcome problems caused by intense environmental uncertainty (Dwirandra & Astika, 2020). The resource-based view posits that a firm can attain a competitive edge by pinpointing resources and capabilities that connect perceptions of environmental uncertainty with enhancements in organizational performance (Bamel & Bamel, 2018; Sabherwal et al., 2019). However, empirical studies indicate that hospitals' organizational ambidexterity strategies can make performance outcomes more positive (Cao et al., 2009; Herzallah et al., 2017) and negative (Alhawamdeh, 2021; Lavie et al., 2011). Based on this research gap, it is aimed to test the effects of organizational ambidexterity on hospital performance. In this context, the study explores how healthcare managers perceive environmental uncertainty and its impact on organizational performance from a resource-based perspective. It also investigates the role of organizational ambidexterity in this impact. Additionally, the study aims to define the effect of environmental uncertainty perceptions on performance and to determine if organizational ambidexterity strategies mediate this relationship, providing insights into effective management practices.

## 2. Conceptual Framework

### 2.1. Perception of Environmental Uncertainty

Environmental uncertainty means that external conditions are constantly changing. Organizations are affected by environmental conditions, technological changes in production and operations, process innovations, competitors' actions, customers' needs, relationships with suppliers, market demand, macroeconomic and industry trends, government policies, and globalization issues (Hoque, 2004). Environmental uncertainty is defined as an organization's inability to effectively detect and respond to changes in its external environment (Karaman, 2019); perceived environmental uncertainty is subjective, and different individuals may perceive the same situations differently (Lipshitz & Strauss, 1997). Therefore, the decisions to be made by managers according to the way they perceive environmental uncertainties may also vary. Empirical studies indicate that managers' strategic decisions are based on senior managers' perceptions of environmental uncertainty (McMullen & Shepherd, 2006). Milliken (1990) classified perceived environmental uncertainty as the uncertainty an organization experiences when attempting to understand and respond to changes in its external environment and conditions (Jahanshahi & Brem, 2020). The perceived level of environmental uncertainty poses a risk for businesses because it may cause the decisions to be made to be erroneous. As a result, it may threaten the lives of organizations. Lack of sufficient information about the environment among managers and employees can cause anxiety and unrest. Perceptions are of great importance when diagnosing and defining environmental uncertainties (Daft & Weick, 1984). Therefore, environmental perceptions are vital in assessing the environment (Turan, 2014). The perception of environmental uncertainty is generally characterized as a need to understand environmental cause-and-effect relationships. Accordingly, the perception of environmental uncertainty may create uncertainty in managers' decision-making processes and may affect managers' accurate decision-making due to incomplete information (Chong, 1995). Information about environmental uncertainty or environmental perception directly or indirectly affects the economy, potential, and strategy of the organization, together with the decision mechanisms and behaviors of the managers (Taştan & Torun, 2015; Irk & Döven, 2018).

There is a lack of evidence in examining the perception of an uncertain environment including the health sector and there is no transparent approach. Hospital managers also define their environment as complex, dynamic, and uncertain (Gifford et al., 2022). The increasingly uncertain and turbulent environment makes research on environmental uncertainty in the healthcare sector important. Improving organizational performance is generally associated with a match between perceived and objective environments (Dess & Keats, 1987). The perception of the environment can directly affect changes in strategic decisions and timing (Barr, 1998). Hwang (2005) found that market uncertainty positively affects market orientation strategies and functional specialization and that market and competitive uncertainty increase top managers' willingness to integrate into the changing market. Another study found that environmental uncertainty was significantly related to non-financial performance measurement systems. As a result of the research, it is stated that highly competitive pressure requires businesses to focus on non-financial resources to utilize critical resources and gain a competitive advantage (Bastian & Muchlish, 2012).

## 2.2. Organisational Ambidexterity

Organizational ambidexterity gained importance after March's (1991) work on exploitation and exploration and has been increasingly adopted in literature (Bodwell, 2011; Raisch & Birkinshaw, 2008; Şimşek, 2009). Duncan (1976) argues that adapting the organizational structure to the environment with the concept of organizational ambidexterity will be a skill. Creating a dual organizational structure by combining mechanical and organic structures is necessary to develop skilled organizations. Duncan proposed the concept of two-way skill for this. As a result of the studies on the effect of organizational ambidexterity on performance, it has been observed that different effects and outcomes are indicated depending on the organizational context (Jurksiene & Pundziene, 2016; Nosella et al., 2012). While there are studies suggesting that organizational ambidexterity has a positive effect on organizational performance (Cao et al., 2009), there are also studies suggesting that organizational ambidexterity does not affect organizational performance (Venkatrama et al., 2009) and even that organizational ambidexterity harms company performance (Kafetzopoulos, 2020). Some researchers argue that organizational ambidexterity may increase the intensity of competition for scarce resources, posing a risk for organizations (Atuahene-Gima, 2005). As observed, there is still no consensus on the relationship between firm performance and ambidexterity. March (1991) characterized the concept of organizational ingenuity in two dimensions: exploratory and utilitarian capabilities.

Similarly, according to Tan and Liu (2014), organizational ambidexterity involves exploration and exploitation. In addition, Han and Celly (2008) emphasize that the ability to adapt the dual strategy is considered as present and future. Şimşek et al. (2010) state that performing strategic actions for different competitive elements at the same frequency and simultaneously can be organizational ambidexterity. Bodwell and Chermack (2010) define organizational ambidexterity as the effective evaluation of opportunities while realizing the organization's strategies. Organizational ambidexterity involves maintaining a balance between product, market, and technological development over the long term. It also provides the ability to manage profitability and coordination in the short term (Chaharmahali & Siadat, 2010). Organizational ambidexterity guides businesses and managers in implementing solutions while adapting to environmental uncertainties (Birkinshaw et al., 2016). Generally, organizational ambidexterity is envisaged as a tool that helps organizations increase their longevity and performance (Turner et al., 2015). In addition, in conditions of environmental dynamism, the possibility of using organizational ambidexterity is associated with sustainable competitive advantages in a dynamic environment when the appropriate organizational ambidexterity strategy is executed (Du & Chen, 2018).

## 2.3. Organisational Performance

Today, businesses face a more competitive environment. Therefore, the importance of organizational performance is increasing (Yıldız & Genç, 2020). The ability of businesses to achieve sustainability depends on creating economic value or benefit. For this reason, performance evaluation is a critical practice for all businesses (Çetenak, 2012). There are many different definitions of organizational performance in the literature. Therefore, there is no universally accepted definition of organizational performance (Alıcı, 2020). According to one definition, organizational performance is the practices related to evaluating a corporate activity that needs to be measured or actions to be taken (Arslan, 2016). Organizational performance reveals an organization's ability to fulfill the requirements of its stakeholders and survive in the

market (Abu-Jarad et al., 2010). It is also described as the result of tasks or activities performed by employees to evaluate how well an organization meets its objectives and goals, reflecting the overall effectiveness of its operations and performance (Ho, 2008). It is known that effectiveness, efficiency, quality, productivity, and innovation effectively achieve organizational performance (Nikpour, 2017).

The concept of performance plays an essential role in helping organizations achieve their goals (Richard et al., 2009). According to Porter (1985), strategic objective is the sum of the time spent by an organization to determine, implement, evaluate, and make decisions about the point that it can reach with the tools. These are equipment it uses to compete in its sector, to gain superiority over its competitors, and to maintain. Organizational performance shows that the objectives have been achieved, sales figures and market share have increased, and the planned strategy has successfully achieved the enterprise's objectives (Eren et al., 2013). Organizational design is required for hospitals to become more resilient and adapt to environmental changes (Begun & Kaissi, 2004; Kim et al., 2015). The organizational design emphasizes the environmental relationships of hospitals operating as open systems. In the studies conducted by Yuchtman and Seashore (1967) and later by Benson (1975), resources, finances, flexibility, adaptability, and growth were used as performance criteria. Many authors have argued that different stakeholders influence organizations and have proposed different dimensions for performance evaluation (Sicotte et al., 1998). Such as Murphy et al. (1996), productivity, growth, profitability, and size; Rowe and Morrow (1999), subjective, financial, market, accounting revenue, stock market, and growth rates; Hamann et al. (2013), stock performance, growth, profitability, liquidity (Alici, 2020).

There are differences in organizational performance dimensions in health institutions compared to other sectors. Capkun et al. (2012) stated that the determinants of organizational performance are the number of beds, the specialization of the hospital, and the hospital's focus on education. Acar and Acar (2014) dimensioned organizational performance as the sum of service performance, financial performance, and perceived performance. Vélez-González et al. (2011) define the performance dimensions of hospitals as financial criteria and non-financial criteria. Similarly, Ogunyomi and Bruning (2015) categorize organizational performance dimensions into non-financial aspects (such as performance stability, staff morale, public image and goodwill, adaptability, and innovation) and financial aspects (financial strength, including profitability, ability to raise capital, level of indebtedness, employee growth, and operating efficiency). There are also studies suggesting that the financial dimension may be insufficient as a dimension of organizational performance (Altuntas & Dönmez, 2010; Kırılmaz et al., 2018). The dimensions of efficiency, clinical effectiveness, safety, responsive management, employee orientation, and patient-centredness are included in the evaluation of the performance of hospitals by WHO (2004) (Çınaroğlu, 2017). As can be easily deduced from scientific studies, hospital performance is analyzed in different dimensions. In some studies, quantitative criteria such as financing and patient numbers come to the fore, while in others, qualitative criteria such as quality and satisfaction come to the fore.

## 3. Hypotheses

In today's uncertain environment, sustaining a competitive advantage is challenging for businesses due to rapid market and technological changes and evolving industry dynamics. This situation forces organizations to change continuously. Under these conditions, ambidexterity is important in terms of expenditures and the ability to strike a balance between exploitation and non-exploitation (Zhaxylyk, 2020). When environmental uncertainty increases, various strategies must be implemented as different knowledge and capabilities are required to remain competitive in developing solutions (Chi & Sun, 2013). Accordingly, high environmental uncertainty is seen as an essential factor affecting the strategic choices of enterprises (Dew et al., 2009; Engel et al., 2014). While an environment with high uncertainty can override existing planning and forecasting techniques, businesses must focus on what they can do with the tools and capabilities or deal with unexpected situations. Organizations operating under high environmental uncertainty face several threats and opportunities (Gubbi et al., 2010). Hospitals operate in a defined environment by intense uncertainty and fierce competition within the healthcare industry. Hospitals also operate in a highly uncertain environment and intense competition. On the other hand, hospitals need to predict the future to provide sustainable services. Predicting the future and achieving high performance can be possible by applying organizational ambidexterity and adopting ambidexterity strategies (Lingelbach et al., 2015). Hospitals that adopt a mastery strategy are therefore not only effective in managing today's business/operational demands but are also able to adapt to an environment of ever-increasing uncertainty and dynamism (Cingöz & Akdoğan, 2015). It has been observed that the use of organizational mastery strategies in markets with intense environmental uncertainties has an impact on organizational performance (Bernal et al., 2019; Yuen et al., 2019).

The literature shows a positive connection between organizational ambidexterity and how organizations perceive and respond to environmental uncertainty (Raisch et al., 2009; Sahi et al., 2020). Accordingly, when managers perceive high environmental uncertainty, they are expected to overcome it by using organizational ambidexterity strategies. Considering all the information discussed, it is shown that there is a significant and positive relationship between the perception of environmental uncertainty and organizational ambidexterity. Based on this, the hypotheses tested and determined are as follows.

H<sub>1</sub>: There is a statistically significant relationship between the perception of environmental uncertainty and organizational ambidexterity.

There is an ongoing debate on how hospitals can improve service delivery in an uncertain environment to meet increasing societal pressure to provide efficient, high-quality, safe services. Hospitals that are creative, open-minded, encourage innovation, and recognize that it can be beneficial to emphasize organizational ingenuity are contributing to providing solutions. For example, it has been observed that the quality and efficiency of healthcare services have increased in Italian hospitals where managers have adopted an exploratory and exploitative strategy. As a result, it was determined that organizational ambidexterity has a positive relationship with hospital performance, enhancing their ability to adapt and thrive in competitive environments (Foglia et al., 2019). Another study involving 250 hospitals revealed that organizational ambidexterity can significantly improve the performance of the enterprise, and the performance can be sustainable. Moreover, it was concluded that ambidexterity plays a mediation effect in the provision of resources and innovation and therefore organizational ambidexterity positively affects organizational performance (Tan & Hu, 2020). A study involving 90 clinics in Germany concluded that ICTs and organizational ambidexterity are related. Therefore, the simultaneous deployment of ICT research and exploitation capabilities increases the ability of hospitals to perceive patient needs and desires, respond accordingly, to behaviors, and contribute to the overall hospital departments (Van de Wetering et al., 2022).

Some studies suggest that organizational ambidexterity strategies will compete for scarce resources (March, 1991) and lead to contradictory results (Bettis-Outland, 2012; Ebben & Johnson, 2005). Hence, maintaining organizational ambidexterity may reduce firm performance (Yu et al., 2018). In contrast, Venkatraman et al. (2006) found no evidence for an organizational performance-ambidexterity relationship. Similarly, Bierly and Daly (2007) suggest that organizational ambidexterity strategies do not contribute to improving the performance of organizational ambidexterity (Alhawamdeh, 2021; Lavie et al., 2011; Uotila et al., 2009).

The answer given to the effect of organizational ambidexterity on organizational performance is still very inadequate. However, it is seen that the emphasis and implications that organizational ambidexterity will increase organizational performance are more robust in current studies. Based on all these findings and the literature, a positive relationship between performance and organizational ambidexterity is expected. Based on this inference, the following hypotheses were developed.

H<sub>2</sub>: A statistically significant association exists between organizational ambidexterity and organizational performance.

Organizational performance is considered an essential element in management literature because it plays a vital role in developing, implementing, and monitoring strategic plans (Teeratansirikol et al., 2013). Therefore, high organizational performance, which refers to an enterprise's success and achieving desired goals, depends on the ability to implement preferred strategies effectively and efficiently (Akinleye et al., 2019). Organizational performance is a critical output showing the result of organizational decision-making and strategy. Predictions about the environment and environmental uncertainties are essential to formulating organizational performance (Gong et al., 2021). Monitoring and perceiving environmental conditions in healthcare institutions is critical regarding hospital performance and competitive advantage (Begun and Kaissi, 2004). Therefore, healthcare institutions that want to perform better than their competitors, take a position against the dangers brought by uncertainty, and maintain their presence in the sector must observe environmental changes well and make their decisions accordingly (Bildik, 2024).

In the literature, studies examine the relationship between organizational performance and perceived environmental uncertainty. Shannassy (2007) states a direct relationship exists between organizational performance and perceived environmental uncertainty (technology uncertainty, government regulations, financial instruments, socio-cultural factors, and raw material suppliers). Managers who face high environmental uncertainty may be more likely to increase their organizational performance goals. In contrast, managers with a low perception of environmental uncertainty may be less likely to increase their organizational performance goals (Nguyen et al., 2021). Senior managers in hospitals need to adopt strategies (competition, cooperation, formal structure, resources) that they should follow to achieve better performance when faced with an uncertain environment. In the face of high uncertainty, hospitals that establish formal structures and have sufficient resources (by purchasing

equipment and new technologies) can respond to the threats of the external environment and improve their performance. Finally, a study suggests that hospitals that adopt collaborative strategies perform better than hospitals that do not (Lo, 2013). In a study conducted with data collected from different industry managers in Egypt and the United Arab Emirates, it is empirically argued that there is no general relationship between organizational performance and perceptual environmental uncertainty (Elbanna & Alhwarai, 2012). Another study found no relationship between financial performance (profitability) and leadership in the health sector when managers perceive environmental uncertainties (Hicks, 2019).

Data from 262 fresh produce export supplier managers in Zimbabwe show that perceived environmental uncertainty has various effects on inter-organizational relationships. It supports the idea that firms that monitor future changes are associated with improved performance (Matanda & Freeman, 2009). In a study conducted in the hotel sector in Turkey, it was concluded that the links between perceived environmental uncertainty and both financial and non-financial performance were partially supported (Köseoglu et al., 2013).

It is observed that there are different results between hospital performance and environmental uncertainty. Therefore, the findings of existing empirical studies on the subject contradict each other. However, the literature shows that the emphasis and implications that managers' perception of environmental uncertainty will increase organizational performance are stronger. Accordingly, a positive relationship is expected between organizational performance and hospital managers' perception of environmental uncertainty. With this expectation, the following hypotheses were developed:

H<sub>3</sub>: There is a statistically significant relationship between the perception of environmental uncertainty and organizational performance.

Based on the literature shows that the interaction between environmental uncertainty and organizational performance occurs in different ways. Although the performance of hospitals operating in a dynamic environment, especially in the health sector, is essential, it is observed that no clear conclusion can be reached when considered together with environmental uncertainty. At the same time, it is thought that decision-makers in strategic management, changing environmental conditions in the relationship between organizational performance and environmental uncertainty, and the ability to benefit from the existing resources of the hospital may change depending on organizational ambidexterity. Studies in the literature investigate hospital managers' perceptions of environmental uncertainty and organizational performance variables (Badri et al., 2000; Haque & Ali, 2016). However, some studies show that organizational ambidexterity does not mediate this relationship.

It is thought that this study, which aims to draw attention to this gap in the literature, will help managers of health institutions to analyze the environment and focus on their abilities to gain superiority over their competitors because of this analysis and thus highlight practices that can increase organizational performance. In addition, as examined above, many studies show that environmental uncertainty perception and ambidexterity affect performance. For this reason, the following hypothesis was developed by considering the effect of environmental uncertainty and organizational ingenuity on performance.

H<sub>4</sub>: Organizational ambidexterity plays a mediating role in the effect of environmental uncertainty perception on organizational performance.

## 4. Methodology

### 4.1. Research Method

This research was conducted using quantitative methods and a survey was used as a measurement technique. After obtaining the necessary ethics committee approval for the study, hospital managers were contacted and requested permission to conduct the study. The surveys were sent face-to-face to managers who wanted to participate in the study. The online survey was sent via a link created via Google Forms to different social media platforms (e.g., WhatsApp, Telegram) for managers who requested it. The prepared survey includes 59 items, 5 of which are demographic characteristics, 18 are environmental uncertainty, 24 are ambidexterity, and 12 are performance.

### 4.2. Purpose and Importance of the Research

Today, effective and efficient management of all hospitals is highly important. Hospital managers' perception and management of environmental uncertainty enables managers to achieve maximum performance using organizational ambidexterity. This study examines the relationship between environmental uncertainty perceptions, organizational performance, and organizational ambidexterity levels of public and private hospital managers. It also examines how organizational ambidexterity mediates the impact of perceived environmental uncertainty on organizational performance, highlighting its role in this relationship.

Understanding and effectively managing the relationship between environmental uncertainty perceptions of public and private sector managers in the health sector and their organizational performance is critical for increasing hospitals' performance and providing a competitive advantage. This relationship can enable managers to manage uncertainties better and increase the effectiveness and efficiency of hospitals by making strategic decisions. Additionally, it aims to provide comprehensive guidance to hospital managers on developing organizational ambidexterity strategies and understanding the impacts of environmental uncertainty in hospitals in Turkey. By examining the current management practices of hospitals, the study will provide managers with practical suggestions on how these strategies can be implemented and provide the necessary information to manage environmental uncertainty impacts better. Furthermore, the study aims to help hospitals improve their performance by identifying best practices in the sector and suggesting strategic approaches. The determination of organizational ambidexterity strategies and the effects of these strategies on performance were examined, and the importance of this concept was aimed to be revealed. In addition, organizational ambidexterity was added to the perception of environmental uncertainty and organizational performance issues, and a new perspective was offered to the limited studies that addressed these variables together.

#### 4.3. Research Population and Sample

The study universe consists of all public and private hospitals operating in Turkey. Since it is impossible to reach the middle and senior-level managers of public, private, and university hospitals operating in Turkey, the study population was limited to hospital managers operating in the Central Black Sea Region. The study population comprises 356 managers from 64 public hospitals and 106 managers from 16 private hospitals, totaling 462 managers. The study was conducted with a sample of 266 managers (61%) who agreed to participate in the research. 25.56% of the participants were female, 53.38% were male. Most participants (51.50%) had a bachelor's degree, 21.05% had a master's degree, and 27.44% had a doctorate or medical

specialty. The mean age of the participants was  $43.65\pm8.079$  years; 26.32% were <40 years, 28.95% were 40-44 years, 21.43% were 45-49 years, and 23.31% were  $\geq$ 50 years. Of the participants, 12.41% were sub-unit managers, 43.98% were administrative unit managers, 17.29% were healthcare services managers, and 26.32% were hospital general managers. According to the length of service in the position, 37.59% of the participants worked for  $\leq$ 5 years, 31.58% for 5-9 years, and 30.83% for  $\geq$ 10 years.

## 4.4. Scale

The data collection tool utilized in the study is structured into four parts. The first part questions specific information about the participants and health institutions. This section includes information on the age, gender, education level, job title, years of service in the position, and the type of sector in which the hospital operates. In the second part, the perceived environmental uncertainty scale developed by Desarbo et al. (2005) and validated in Turkish by Ark (2008) was used to measure health institution managers' perception of environmental uncertainty. The scale consists of three dimensions, each consisting of 6 questions and 18 items to measure the perception of market uncertainty, technology uncertainty, and competitive uncertainty. This scale provided excellent internal consistency (Cronbach  $\alpha$ =.873).

The third part consists of the organizational performance scale designed by Acar and Acar (2014) to measure managers' perceptions of organizational performance. The scale consists of three sub-dimensions and 12 questions: performance perception (items 1-3), service performance (items 4-9), and financial performance (items 10-12). The reliability of this scale was found to be very good as a result of the analysis (Cronbach  $\alpha$ =.937).

In the last part, a scale originally developed by Bodwell (2011) and translated into Turkish by Gülenç (2019) was used. The scale consists of one dimension and 16 items. The multi-item scale showed excellent reliability (Cronbach  $\alpha$ =.816). Scales created in a 5-point Likert structure.

## 5. Data Analysis and Findings

IBM SPSS software was utilized to analyze the data from the study, and Structural Equation Modeling (SEM) was employed to assess the effects of mediation. Before analyzing the data, validity and reliability analyses were conducted. In the analysis of the data, descriptive statistical methods, validity and reliability analyses, and correlation analysis were used, path analysis was applied, and the analysis was performed at a 95% confidence interval (p=0.05).

# 5.1. Analysis Results of the Research: Validity and Reliability

Before testing the research hypotheses, the scales underwent validity and reliability analyses to ensure their accuracy and consistency. Reliability pertains to the stability and consistency of a measurement tool over time. In this study, Cronbach's alpha ( $\alpha$ ) coefficient was used to evaluate the scales' reliability, reflecting their capacity to produce consistent and repeatable results across various measurements (Mellinger & Hanson, 2020; Sürücü & Maslakçı, 2020).  $\alpha$  takes a value ranging from 0-1, and the reliability level increases as the value approaches one. More precisely, in the case of  $0 \le \alpha < .40$ , the data cannot be used because the scale is unreliable. On the other hand, the scale has a low reliability level between  $.40 \le \alpha < .60$ , highly reliable between  $60 \le \alpha < .80$ , and a high reliability level between  $.80 \le \alpha < 1$  (Kalaycı, 2014). As the values according to the study shown below, the scales meet the reliability conditions and can be used in data analysis. The confirmatory factor analysis (CFA) performed using the AMOS-26 software to assess the structural validity of the scales demonstrated that all factor loadings exceeded 0.5, indicating robust measurement properties for the study's constructs (Hair et al., 1998).

Compliance Criteria	Acceptable Compliance	Perfect Fit	Perception of environmental uncertainty	Organizational ambidexterity	Organisational Performance
X²/sd	≤3	≤5	1.981	2.703	2.528
GFI	.8589	.90 ≤	.911	.853	.932
NFI	.9094	.95≤	.914	.905	.965
TLI (NNFI)	.90-94	.95≤	.947	.926	.970
IFI	.90-94	.95≤	.955	.938	.978
CFI	.90-94	.95≤	.955	.938	.978
RMSEA	.0608	.05≤	.059	.078	.074
RMR	.0608	.05<	.031	.077	.036
α	-	-	.807	.955	.812

## Table 1: Validity and reliability results

Compliance Criteria	Mean	S.D.
Organisational performance	3.61	0.674
Organizational ambidexterity	3.86	0.571
Perception of environmental uncertainty	3.42	0.419

The mean and standard deviation values of the variables are presented (Table 2). According to the findings, the mean of organizational performance is 3.61±0.674, the mean of organizational ambidexterity is 3.86±0.571, and the mean of environmental uncertainty perception is 3.42±0.419. According to this finding, the participants' agreement on environmental uncertainty was found to be lower. This situation is vital in terms of evaluating the environmental perceptions of managers. Managers perceive the changes or risks occurring in the external environment of the health institution at a lower level than the internal environment. In other words, managers focus more on the hospital's internal environment.

# 5.2. Hypothesis Tests

Correlation analysis was applied in the study to determine the relationships between the variables.

	1	2	3
1. Perception of environmental uncertainty	1		
2. Organisational performance	.174**	1	
3. Organizational ambidexterity	.298**	.710*	1

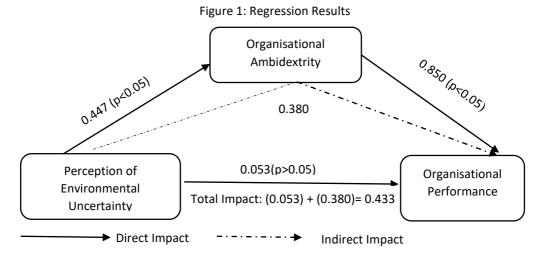
Table 3: Mean and Standard Deviation of Scales

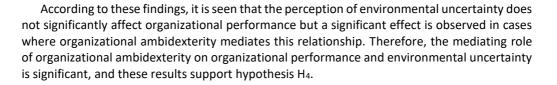
According to the correlation findings, positive and statistically significant relationships (p < 0.05) were found between the organizational performance and perception of environmental uncertainty (r = .174) and between organizational performance and organizational

ambidexterity (r = .298 for ambidexterity and r = .710 for performance). These results support hypotheses H1, H2, and H3.

The main problem of the research is determined whether perceived environmental uncertainty affects organizational performance and, if so, how organizational ambidexterity affects this effect. The Structural Equation Model (SEM) program was used to test the hypotheses in the research model. SEM was preferred because it allows examining models that test causal and correlation relationships between observed and latent variables and brings together analyses such as covariance, variance, multiple regression, and factor (Tüfekçi & Tüfekçi, 2006). Important fit indices of SEM with CMIN/DF= 2.624, NFI=.924, GFI=.966, CFI=.950, TLI=.913, and REMSEA=.078 values show that it can meet goodness of fit (Karagöz, 2017).

The estimated regression coefficients of the variables in the structural equation model are presented in Figure 1. As shown in the figure, the perception of environmental uncertainty has a significant and positive effect on organizational ambidexterity (b =.447; p<0.05). Similarly, organizational ambidexterity significantly and positively affects performance (b=.850; p<0.05). However, the perception of environmental uncertainty did not have a significant effect on organizational performance (b=.053; p>0.05). Organizational ambidexterity significantly mediates the effect of environmental uncertainty perception on organizational performance ( $\beta$ =.380). When the mediating role of organizational ambidexterity is considered, environmental uncertainty perception significantly affects organizational performance ( $\beta$ =.053+.380=.433).





## 6. Conclusion

In the study, organizational ambidexterity was examined within the framework of the resource-based approach, and its mediating role in the relationship between organizational performance and environmental uncertainty was determined. In the literature, it is accepted that hospitals that can create new capabilities while using existing capabilities simultaneously can achieve higher performance levels (Simsek et al., 2010). According to the study results, a significant and positive relationship exists between hospital managers' perceptions of environmental uncertainty and hospital performance. According to a study conducted in Indonesia, hospital performance is negatively affected when hospital managers do not perceive environmental uncertainty, and cost performance cannot be used effectively (Adhikara et al., 2020). According to another study, if hospital managers do not have sufficient information equipment, they may be inadequate in decision-making, and as a result, organizational performance may decrease. Additionally, several studies reveal that hospital performance varies due to environmental uncertainties caused by changing conditions and rapidly evolving needs. They highlight how these factors affect healthcare services' overall effectiveness and efficiency (Wang & Fang, 2012). The study involving 94 hospitals in Canada concluded that using information technologies in an environment with high uncertainty can provide value and competitiveness to the organization and positively affect hospital performance. In addition, the study revealed that with the use of information technologies, managers can be more successful in the strategic decision-making process, which positively affects hospital performance (Guillemette et al., 2022). A study conducted in the USA revealed that environmental uncertainty significantly moderates the relationship between organizational performance and market orientation in the hospital sector and affects hospitals' market conditions and performance outcomes (Lonial & Raju, 2001).

In another study, organizational ambidexterity was found to mediate the effect of organizational performance and environmental uncertainty perception. In the literature, studies examine the effect between variables in different sectors. However, there are relatively few studies investigating the mediation effect. Especially in the health sector, there is no study examining the mediation of these variables. Studies in different sectors support this conclusion of the study. Kafetzopoulos (2020) reported that organizational ambidexterity has a vital role in improving job performance. The study revealed that the impact of organizational ambidexterity and performance varies depending on the change in environmental uncertainty. In particular, it was observed that when environmental uncertainty levels increase, organizational ambidexterity strategies and performance outcomes also change. This finding shows that the impact of environmental uncertainty on organizational strategy and performance may vary depending on the degree of uncertainty and how these changes shape the strategic approaches of organizations. In addition, it has been stated that organizational ambidexterity affects performance more in high-uncertainty environments. High competition, instability, and rapid changes can improve firm performance through organizational ambidexterity strategies. Environmental uncertainty does not moderate the relationship between quality orientation and organizational ambidexterity. The study covers twenty-five industries in the United States (pharmaceutical, computer, food, steel, paper) and shows that organizational ambidexterity benefits large firms more than small firms. At the same time, the study also concluded that in an uncertain environment, firm performance might increase with organizational ambidexterity (Lin et al., 2007). In a study covering 90 hospitals in the Netherlands, it was concluded that information technologies contribute to strengthening organizational ambidexterity skills, enabling hospitals to perceive adequately patient needs and behaviors, contributing to the overall hospital departments and performance (van de Wetering & Versendaal, 2021). Similarly, according to a study of 325 high-tech enterprises in China, exploitative and exploratory strategies mediate the relationship between organizational performance and leadership (Gong et al., 2021).

According to our study results, organizational ambidexterity is a key mediating variable in the relationship between environmental uncertainty and organizational performance. According to this result, based on our study results, hospitals can use resources effectively and increase organizational performance, which can be increased by using organizational ambidexterity strategies. Organizational ambidexterity strategies may have a positive effect on reducing environmental uncertainty and thus increasing organizational performance.

The model developed in this study can be said to be distinctive in that it accurately measures how organizational ambidexterity mediates the relationship between organizational performance and perceptions of environmental uncertainty and offers a new perspective on these dynamics. The confirmatory factor analysis results showed that the model was adequate and qualified to measure the relationships between the variables. In future studies, the characteristics of each variable should be expanded by conducting studies on its subdimensions. The model we have established can be used in different sectors. The results, sample size, and variables obtained from this research are limited. Comparisons can be made by adding different variables in future studies.

It is an essential requirement for hospitals to closely follow the current developments in the sector, to analyze the environment constantly, and to improve with the information they obtain continuously. It is foreseen that hospitals can also benefit from their existing experiences in their development. Hospital managers will achieve high performance when they can create value by developing, utilizing, and researching aspects of the organization. Hospital managers should be able to implement practices to increase hospitals' performance by understanding the advantages of organizational ambidexterity. Hospital managers should recognize that there are intense changes in the environment and that these changes may create some opportunities or threats for them. They should be able to show the necessary effort and willingness to adapt to this change. With the uncertainty of the environment and increasing competition, hospitals need to implement ambidexterity strategies to utilize their capacities. Our research findings show that organizational ambidexterity mediates the relationship between organizational performance and perception of environmental uncertainty, and it can be said that it emphasizes its key role in this dynamic. Hence, effective and strategic decisions must be taken to improve hospitals' performance in the face of intense competition and constantly changing dynamics. These decisions should include both the optimization of existing resources and the evaluation of new opportunities. To make these decisions, it is important to have the ability to use exploratory and pragmatic strategies.

## 6.1. Theoretical Contribution

The results of this study build on existing theory regarding the importance of supporting hospital managers in managing environmental uncertainty to improve hospital performance and promote organizational ambidexterity in hospitals. Conceptually and empirically considering the interactions between the variables, the mediating role of perceptions of environmental uncertainty, organizational ambidexterity, and organizational performance is intended to contribute to developing a theory explaining these interactions and their effects. The results of this study contribute to the literature in different ways. Firstly, the study empirically emphasizes the importance of exploratory and exploitative strategies in the impact of environmental uncertainty perception on hospital performance. It provides empirical evidence of the mediating effects of organizational ambidexterity. Second, it empirically supports the positive performance effects of organizational ambidexterity on hospitals. This study promotes organizational ambidexterity in organization, management, and strategy research for organizational performance. It also contributes to the existing literature by examining organizational ambidexterity as a mediator and offers new insights that help reconcile inconsistent results.

### 6.2. Suggestions for the Sector and Managers

It is an important requirement for hospitals to closely follow the current developments in the sector, to constantly analyze the environment, and to improve with the information they obtain continuously. It is foreseen that hospitals can also benefit from their existing experiences in their development. Hospital managers can achieve high performance by creating value by developing, utilizing, and researching aspects of the organization. Hospital managers should be able to implement practices to increase hospitals' performance by understanding the advantages of organizational ambidexterity. Hospital managers should recognize that there are intense changes in the environment and that these changes may create some opportunities or threats for them. They should be able to show the necessary effort and willingness to adapt to this change. With the uncertainty of the environment and increased competition, hospitals need to implement ambidexterity strategies to utilize their capabilities. Our research results revealed the mediating role of organizational ambidexterity in the relationship between environmental uncertainty perception and organizational performance. Therefore, making appropriate decisions to increase hospitals' performance in an ambidexterity competitive, ever-changing, and dynamic environment requires promoting exploratory and utilitarian strategies.

#### 6.3. Suggestions for Further Research

The research was conducted through the data obtained from public and private hospitals in the Middle Black Sea region due to the pandemic and time constraints. Similar studies can be conducted in different and larger sample groups to obtain more generalizable results. The model developed in the study is original because it has a feature that can measure the effect of organizational ambidexterity and environmental uncertainty perception on organizational performance through a mediating role. This model can comprehensively evaluate the dynamics between environmental uncertainty and organizational performance and the role of ambidexterity in this process. In this context, the model provides a new perspective to the literature and examines the effect and importance of organizational ambidexterity in detail. According to the findings of confirmatory factor analysis, the model is sufficient and qualified to measure the relationships between these variables. In future studies, it is suggested that the characteristics of each variable should be expanded by conducting studies on its subdimensions. The model we have established can be used in different sectors. The results, sample size, and variables obtained from this research are limited. Comparisons can be made by adding different variables in future studies.

# 6.4. Limitations of the Study

The most fundamental limitation of the study is that the field research was carried out during the COVID-19 outbreak and the group examined within the scope of the research included employees at risk. This situation caused some difficulties in distributing and collecting the survey forms. The health and safety concerns of the workers and the researcher during the outbreak period made the effectiveness of the research process and data collection methods difficult, thus affecting the study's limitations. The other important limitation of the study is that the study can only be carried out by hospital managers who can obtain permission since permission cannot be obtained for the study in some hospitals. For this reason, the area of the study is limited only to the hospitals where the study was conducted.

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#### **Extended Summary**

#### The Role Of Organizational Ambidexterity In The Effect Of Perceived Environmental Uncertainty On Performance

The purpose of this study is to determine whether organizational ambidexterity mediates the effect of perceived environmental uncertainty on organizational performance. Hospitals operating in the health sector are institutions that are constantly changing, where temporal delays can have negative consequences in the long term, and are in constant interaction with their environment. Therefore, today's hospital managers should carefully follow the environmental changes experienced in order to manage their hospitals effectively and efficiently and develop and implement strategies appropriate to the changing environmental conditions. Although it is more difficult for business managers to make decisions in sectors where environmental changes are experienced rapidly, it is easier in sectors where change is slow and predictable. In this context, it is thought that hospital managers can contribute to organizational performance by following environmental changes, perceiving change correctly, and using the skills that will provide superiority over their competitors. Therefore, it is thought that the results and suggestions of this study will contribute to the development and enrichment of the literature, and will contribute to the managers of health institutions to increase organizational performance and gain competitive advantage.

Milliken (1987) defines the concept of environmental uncertainty as "an individual's lack of knowledge to accurately predict the organization's environment or lack of ability to distinguish between relevant and irrelevant information." In other words, perceived environmental uncertainty explains management's lack of critical information about the business environment. A high level of perceived environmental uncertainty in an organization means the emergence of risky situations for organizations. For this reason, high environmental uncertainty may lead to erroneous decisions in organizations.

The changing environment, market conditions and industrial relations, global uncertainties, competitive power, organizational sustainability, efficiency, productivity and performance effectiveness have brought the concepts to the forefront. Organizations that want to continue their activities and be successful should pay attention to the concept of performance. In this sense, organizational performance has become vital for all organizations, including hospitals. In order for businesses to maintain their existence, they need to examine their operational, financial and environmental performances and the feedback they receive from these examinations. For this purpose, it is inevitable for businesses to make continuous performance evaluations by also considering environmental factors. For this purpose, businesses should develop different capabilities from their competitors. Continuously pursuing new searches and discoveries and using existing capabilities in the most appropriate way are the main goals of the strategies determined on this basis. In this case, the organizational mastery of businesses gains importance. Organizational mastery is the totality of the knowledge and capabilities that enable businesses to control their activities and use their assets (Hughes et al., 2020). Organizational mastery involves following and managing old and new competencies, capabilities and information at the same time. Therefore, it is accepted that organizational mastery enables the use of organizational ties and existing complementary resources between old and new technologies, which are necessary for organizational mastery (Veider and Matzler, 2016). It may be necessary to have critical skills to adapt to constantly changing environmental and competitive conditions and to achieve strategic goals. In this context, the concept of environment, environmental factors, organization-environment relationship in general, organization-environment relationship within a theoretical perspective and resource-based approach, environmental uncertainty and perception of environmental uncertainty are discussed in this study.

In line with the purpose of the research, the research was designed as a quantitative study. In this context, the required data were collected using a questionnaire form that included the demographic characteristics of the participants, the Perceived Environmental Uncertainty Scale, the Organizational Performance Scale, and the Organizational Dominance Scale. The Perceived Environmental Uncertainty Scale was developed by Desarbo et al. (2005) and adapted to Turkish by Ark (2008). Acar and Acar (2014) developed the organizational performance scale, and its validity and reliability analyses were conducted. Bodwell (2011) developed the organizational dominance scale and adapted it to Turkish by Gülenc (2019). The target universe of the research is all managers of public and private hospitals operating in Turkey. However, due to resource and time constraints, the study was conducted on senior and middle-level managers of hospitals operating in the Central Black Sea Region. Accordingly, the research universe consists of 462 managers working in hospitals operating in the region, and the sample consists of 266 (57.6%) managers who agreed to participate in the research. The current study adopted a quantitative research design and a cross-sectional field study, and the questionnaire form consists of four sections. Perceived Environmental Uncertainty, Organisational Mastery, and Organisational Performance Scales were used in the study. Before testing the hypotheses of the study, validity and reliability analyses of the scales were conducted. The data obtained from the study were first analyzed for validity and reliability. Descriptive statistical methods and structural equation modeling were used to analyze the data. The data were analyzed at a 95% confidence interval (p=0,05). The data were analyzed using SPSS 22 and AMOS 24 software. Correlation analysis was performed to test the hypotheses related to the research model and determine the relationship between the variables. Path analysis, one of the Structural Equation Modelling (SEM) methods, was used to measure independent variables' direct and indirect effects on dependent variables.

According to the results of this study, there is a significant relationship between hospital managers' perception of environmental uncertainty and organizational mastery. It is understood that the research findings are compatible with the literature. According to the study results, a significant and positive relationship exists between organizational mastery and general organizational performance. When the literature is examined, it is seen that most studies support this finding. According to the study results, a positive and significant relationship exists between hospital managers' perceptions of environmental uncertainty and hospital performance. According to other study results, organizational mastery has a mediating role in the effect of environmental uncertainty perception on organizational performance. In line with all these results, all study hypotheses were accepted.