

## Article

# Promoting Strategic Flexibility and Business Performance through Organizational Ambidexterity

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**Abstract:** The purpose of this paper is to develop a comprehensive structural model to understand the outcomes of organizational ambidexterity (OA) within the manufacturing and service sector. It focuses on evaluating the effects of OA on business performance and strategic flexibility while also exploring the under-researched relationship between strategic flexibility and business performance. To accomplish this objective, an empirical survey was carried out among a sample of 370 Greek manufacturing and service firms. Exploratory and confirmatory factor analyses were utilized to extract and validate the latent constructs examined. Finally, the structural relationships among these latent constructs were determined using structural equation modeling (SEM). The study's findings reveal the significant contributions of OA to both firm performance and strategic flexibility. Additionally, the results demonstrate the positive influence of strategic flexibility on business performance. This research sheds light on the multifaceted impacts of ambidexterity, offering valuable implications for managers, decision-makers, and practitioners. The outcomes underscore the importance of ambidexterity in various dimensions of business performance and highlight its role in fostering strategic flexibility. This study stands out by offering a holistic model that explicates the outcomes of OA within the manufacturing and service sector. It places particular emphasis on the interplay between business performance and strategic flexibility, an area that has received limited attention in prior research. By empirically examining these relationships and providing practical guidelines, the proposed model enriches our understanding of ambidexterity's significance and supports further research in this domain within organizations.

**Keywords:** organizational ambidexterity; business performance; strategic flexibility



**Citation:** Kafetzopoulos, P.; Psomas, E.; Katou, A.A. Promoting Strategic Flexibility and Business Performance through Organizational Ambidexterity. *Sustainability* **2023**, *15*, 12997. <https://doi.org/10.3390/su151712997>

Academic Editor: Wen-Hsien Tsai

Received: 28 July 2023

Revised: 23 August 2023

Accepted: 26 August 2023

Published: 29 August 2023



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## 1. Introduction

During periods of uncertainty and change, firms should apply new discoveries to the market and represent their values in order to increase their performance and ensure their survival [1]. Some researchers suggest that organizations must strike a balance between capitalizing on their current business field and exploring new business fields [2]. These distinct sets of activities can be encapsulated by the concepts of exploration and exploitation in OA [3].

It is imperative to manage exploration and exploitation simultaneously, as the failure to do so can have a counterproductive effect on overall performance [4]. In the short term, exploitation and exploration activities mutually reinforce each other and play a vital role in ensuring an organization's long-term survival [5]. Thus, we conceptualize ambidexterity as the extent to which exploration and exploitation are in balance [6]. The contradictory nature of exploration and exploitation within an ambidextrous orientation gives rise to significant managerial challenges, which, in turn, have an impact on organizational outcomes [7]. Ref. [8] posit that exploitation activities aim to refine and extend existing knowledge to improve efficiency, while exploration activities involve experimenting with new concepts

and applying that knowledge to one's context to develop new knowledge. Ref. [9] points out that companies capable of maintaining a balance between stability and innovation in their operations and strategies are better equipped not only to survive, but also to enhance their performance and flexibility in a fiercely competitive business landscape. The business environment exerts pressure on firms to engage in both exploitative (incremental, efficient) and explorative (discontinuous, radical, flexible) innovation activities [4,10] leading to the development of multiple contradictory structures, processes, and cultures within an organization's boundaries [11,12].

Strategic flexibility (SF) is a firm's capability to operate productively or more efficiently than their competitors [13]. It is defined as "an organization's ability to take appropriate actions in response to external environmental changes" [7]. Empirical research has shown that an SF perspective can stem from an organization's ability to identify important changes in its external environment and that it functions only if a firm has the capability to develop and allocate resources efficiently [14–16]. A fundamental question in the field of management is how firms can achieve and sustain SF [13] as our understanding on this topic is limited [17]. Thus, many authors [18,19] suggest a more multi-level approach to bring new knowledge and experience of SF into firms. Moreover, the existing literature is silent on how an organization can create SF and increase its performance through OA [20,21]. Although OA, SF, and business performance are crucial, there has been a lack of research into how they are interconnected. Research into the relationship between the ambidextrous approach (exploration and exploitation) and firm performance has primarily concentrated on historical financial metrics and related ratios (such as revenue, sales growth, or return on assets) [22]. Thus, there is a need for additional studies to examine the role of OA in SF and business performance simultaneously [23] using multiple performance measures [24].

The main purpose of this study is to contribute to the management literature by investigating the role of OA in supporting SF, and the degree to which this leads firms to increased their business performance. The current knowledge of critical organizational capabilities will be extended both in theory and in practice. The proposed conceptual model is the first to highlight a novel perspective of OA and the way it can be used to create a supportive environment for increased SF. Thus, it adds value to the body of knowledge and provides insights for industrial managers to help them understand and manage exploration and exploitation to expand SF and improve performance.

The remainder of this article is structured as follows: In Section 2, we set out the theoretical background and hypotheses. Section 3 describes the methodology used in this study, while in Section 4, building on this theoretical foundation, a research model is derived and tested in a large-scale empirical study. Section 5 of the manuscript provides a concluding discussion of the results. In addition, the Section 6 of the paper include discussions of the conclusions drawn from the study, the limitations of the study, and suggestions for future research.

## 2. Theoretical Background

### 2.1. Organizational Ambidexterity

Ambidexterity is used to refer to organizations that can engage in both exploitation (activities focused on refining and improving existing processes) and exploration (activities centered around discovering new approaches, planned experimentation, and innovation). Essentially, ambidexterity involves aligning with current activities to meet existing demands while also being adaptable and proactive in anticipating future changes [25]. OA refers to a firm's ability to simultaneously develop and use new resources and skills through exploration while effectively utilizing and maximizing the value of existing resources through exploitation. In other words, it involves the organization's capacity to explore new opportunities and innovate while also efficiently leveraging its current resources to drive performance and competitiveness [26,27]. It is argued that the simultaneous pursuit of both exploration and exploitation is not only feasible but also beneficial for enhancing organizational performance [11,28]. To effectively support an ambidextrous orientation [29],

firms must maintain a delicate balance between exploration and exploitation activities. Striking this balance allows organizations to simultaneously explore new opportunities and exploit existing capabilities, leading to long-term success and adaptability in dynamic environments [30]. Even though both capabilities have the potential to significantly contribute to success and survival, the single usage of either exploratory or exploitative capabilities may create confusion. Overemphasizing exploitative capabilities in an organization may lead to a monotonous approach, while solely focusing on exploratory capabilities can prevent companies from fully utilizing their existing resources and capabilities [12]. In other words, focusing solely on exploitation can lead to a success trap (excessive emphasis on refining existing capabilities hinders the exploration of new opportunities), whereas focusing solely on exploration can result in a failure trap (excessive focus on innovation and experimentation while neglecting the efficient utilization of existing resources and capabilities) [31].

## 2.2. Strategic Flexibility

SF, in general, is a measure that indicates the degree of readiness of an organization to respond and adapt to environmental changes. It is considered a crucial mechanism that assists organizations in dealing with uncertain situations and improves their performance [32]. In the management literature, SF represents a form of dynamic capability that emerges through the adoption of innovative technologies [33,34]. It is defined as an organization's ability to identify significant changes in the external environment. This ability empowers organizations to adapt to sudden alterations promptly and effectively both within their internal operations and in the external context [35].

Ref. [20] claim that "SF can enable organizations to obtain competitive advantages in the dynamic competitive environment, which motivates us to explore how organizations obtain SF". SF is characterized as a firm's capacity to swiftly reconfigure its resources and activities in response to environmental demands [21]. Generally, SF enables companies to achieve and maintain a competitive advantage [36]. Ref. [37] was the first to propose the concept of SF, and he divided it into resource flexibility and coordination flexibility. Resource flexibility is very important for an organization as it must have the ability to allocate resources reasonably and flexibly, especially in order to solve problems concerning effective communication and transparent information sharing. Coordination flexibility is essential for organizations to sustain their competitive edge. A company's coordination flexibility is higher when it can allocate its existing resources towards product strategies aimed at the development, distribution, and marketing of new products and services [36].

## 2.3. Business Performance

Business performance is the ultimate measurement tool for evaluating organizational outcomes and strategic goals [38,39]. It is influenced by various market contingencies and organizational factors [40]. For many managers and business owners, understanding how their companies perform in the marketplace is a primary concern [41,42]. Moreover, business performance expresses the degree to which a company can efficiently and effectively perform its activities, and it can be used to judge whether the implemented activities are successful and whether the company can survive in a certain market. In general, the performance measurements of a company can be broadly classified into two categories: financial performance and non-financial performance. From a financial perspective, measuring financial performance is considered one of the most critical assessments of overall performance [36]. Financial performance has great significance, and it can be measured using metrics such as sales growth, sales transactions, profits achieved, return on investment, market share, return on assets, and overall profitability [43–45].

On the other hand, non-financial performance refers to the aspects of a company's performance that are not solely measured using monetary gains or profits. Non-financial measures encompass diverse methods of measuring long-term objectives. There are several kinds of non-financial performance measurements, such as SF, market share, quality, cus-

customer satisfaction, innovation performance (product performance, digital performance, and service performance), employee performance (employee commitment, employee satisfaction, and employee loyalty), operational performance, marketing performance (customer loyalty), and brand equity [46,47].

### 3. Hypotheses Development

#### 3.1. Organizational Ambidexterity and Business Performance

A review of the literature on OA suggests that companies that pursue predetermined goals while remaining flexible so as to adapt quickly to environmental changes can achieve higher performance outcomes [14,48,49]. The current state of dynamism has brought attention to the importance of agility in the business domain. When reviewing research in both corporate and academic contexts, it becomes evident that organizations require dynamic capabilities to navigate changes effectively. Successfully managing the various processes that evolve within shifting circumstances demands specific leadership skills. Strategic leaders who possess these traits can skillfully leverage internal resources efficiently (exploitative) while also implementing dynamic strategies involving innovative approaches (exploratory) in a balanced manner (ambidexterity). The idea that achieving and maintaining organizational ambidexterity could be considered a dynamic proficiency has influenced our research [50].

The existing literature mainly assumes that ambidextrous behavior leads to higher financial performance for companies (e.g., [51–53]). Ref. [25] revealed a significant correlation between an organization's ability to foster alignment and adaptability within its units and its performance outcomes, encompassing both financial and non-financial measures. Similarly, ref. [54] concluded that concurrently pursuing exploitation and exploration activities has a positive impact on an organization's financial performance. These findings highlight the importance of balancing different dimensions of organizational activities to achieve favorable performance outcomes. Ref. [55] demonstrated a positive correlation between ambidextrous behavior and both short-term business profitability and long-term performance, as reflected in the stock market value of the organization. Ref. [56] showed that ambidextrous organizations can offer a wider range of innovative products compared with their competitors who focus solely on either exploitation or exploration. Additionally, ref. [57], in their article about high-tech firms, claim that balancing the trade-off between exploitation and exploration can result in a synergistic or reinforcing impact on the performance of high-tech firms. According to [58], from an ambidexterity perspective, OA is positively correlated with business performance. Firms that simultaneously embrace both exploration and exploitation orientations attain better performance compared with others. However, it is important to note that exploitation and exploration activities have distinct impacts on business performance [10]. Thus, we can propose the following hypothesis:

**H1.** *Organizational ambidexterity has a positive impact on business performance.*

#### 3.2. Organizational Ambidexterity and Strategic Flexibility

According to the literature, ambidexterity is considered a significant operational capability within organizations [59]. Researchers such as [60–62], state that both OA and SF exist within the context of dynamic capabilities. Strategic foresight is a capability that deserves particular attention as it reportedly influences both ambidexterity and SF, and, thus, enables firms to be strategically agile and support their ambidextrous strategies. OA enables organizations to pursue multiple strategic options and alternative courses of action simultaneously [63]. In this context, OA plays a vital role in fostering SF within organizations. By nurturing ambidexterity, SF supports the development of product innovations. This capability allows organizations to effectively balance the exploration of new opportunities and the exploitation of existing resources, and this leads to the creation and implementation of innovative products that can drive competitive advantages and business growth [14]. Organizations conduct exploratory processes in their quests to discover new combinations and new practices that will ensure their long-term viability and enable them

to remain competitive in the long run [64]. OA increases product variety through the development of continuous innovations, and it also enables companies to be resource efficient. In short, this means that organizations conduct research to respond to unforeseen changes because responsiveness is fundamental to creating SF. Exploration is also a strategy that helps organizations to remain competitive in the long run. Ref. [65] recognize that the dynamic capability and ambidexterity of the supply chain enables focal companies to simultaneously leverage the exploitation and exploration of the supply chain, meaning that they can be strategically flexible. Therefore, SF is a crucial skill that enables better adaptation to unpredictable changes in the business environment [66] and contributes to the long-term survival of organizations [7]. According to [67] the central aspect of OA involves the capacity to detect and capitalize on emerging opportunities by concurrently engaging in exploration and exploitation. Consequently, this concept is intricately linked to two fundamental elements of SF: innovation/creative technology utilization and the recognition of opportunities. Improved SF enhances the positive effects of technological proficiency on exploration. In situations where SF is heightened, increased technological capability leads to more innovative exploration. The adaptable allocation of resources and the reshaping of processes empower organizations to gain competitive advantages within dynamic contexts [35]. Recently, ref. [16] point out that managerial knowledge supports dynamic capability by providing insights into how OA effects SF. Thus, we can propose the following research hypothesis:

**H2.** *Organizational ambidexterity has a positive impact on strategic flexibility.*

### 3.3. Strategic Flexibility and Business Performance

Previous research has recognized that organizations must rely on SF to react well to uncertain situations and respond to emergent exogenous changes [1]. Moreover, it has already been established that due to the characteristics of the new competitive landscape, in which markets are increasingly intense, unpredictable, and fast-paced, SF has gained a crucial role in business survival [7]. Therefore, organizations should not simply act quickly at a specific moment in time, but instead they should consistently evolve, adapt, and reshape their strategies for longer periods of time in order to be strategically flexible [18].

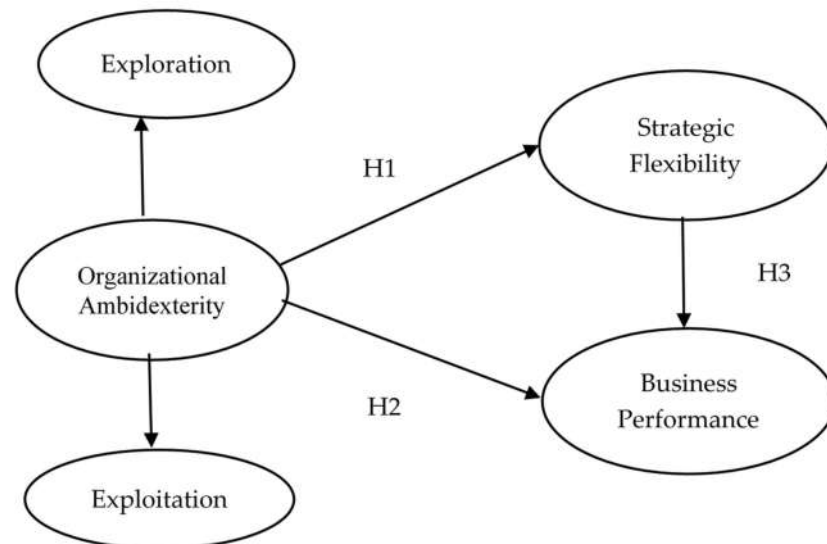
According to the dynamic capability theory proposed by [68], SF can serve as an effective mechanism to assist companies in adapting to changes in a competitive environment [69]. It plays a crucial role in enabling firms to overcome economic and political crises, sector declines, and regulatory uncertainties. By possessing the capability to adapt, adjust, and innovate in response to changing market conditions, organizations can effectively enhance their performances and remain competitive in dynamic and challenging business landscapes [70]. Consequently, SF becomes vital for organizations wishing to accurately perceive their external environments and to strike an appropriate balance between flexibility and efficiency [71]. Ref. [72] conducted a study involving 350 Chinese organizations and found that SF positively affected organizational performance, while ref. [73] point out that SF is a crucial element that enables companies to gain a competitive advantage in the modern era. Ref. [74] states that SF is a very powerful mechanism, especially in frequently changing environments in which the needs and preferences of customers are constantly changing, and that it has the potential to enable organizations continuously improve their performance. Flexible organizations can maintain adaptations by achieving business realignments and transferring resources among business units to effectively respond to changing circumstances in the competitive, technological, and social environments. This reshaping of flexible organizations forces them to deploy their resources in new contexts, acquire new skills, and capitalize on competitive vulnerabilities [75]. Moreover, SF serves as a significant source of resilience [76] for manufacturing systems, allowing them to effectively manage instability caused by internal changes without loss of performance [77]. To summarize, SF assists organizations in identifying and adjusting to the constantly evolving external environment, thereby creating strategic opportunities that enhance organizational performance [21]. This leads us to the third research hypothesis:



**H3.** *Strategic flexibility has a positive impact on business performance.*

### 3.4. The Conceptual Framework

Based on our analysis of OA–SF–business performance, we developed a structural model (depicted in Figure 1). This study investigates the role of OA, comprising exploration and exploitation strategies, on SF and business performance. The model aims to validate the extent to which these strategies contribute to overall organizational success and SF. Additionally, we will assess the impact of SF on business performance.



**Figure 1.** The conceptual model.

In the proposed model (Figure 1), organizational ambidexterity (OA) is represented as comprising exploration and exploitation strategies. These strategies interact with each other and have potential direct and indirect effects on SF and, in turn, on business performance. The relationship between OA and SF will be examined to determine the extent to which a balance between exploration and exploitation fosters strategic foresight within organizations. Furthermore, the model explores the influence of SF on business performance. By analyzing how SF enables organizations to adapt, innovate, and respond to environmental changes, we can gain insights into its impact and the degree to which it can help achieve better business performance outcomes.

## 4. Research Methodology

### 4.1. Sample and Questionnaire Development

The proposed model and hypotheses were examined through a questionnaire survey approach. The questionnaire was developed based on an extensive literature review and interviews with market professionals. Before conducting the survey, a pretest was conducted involving 15 individuals from Greek firms, and through personal interviews with managers. Minor adjustments to the questionnaire were made based on specific suggestions. A two-page survey instrument was designed, comprising a total of 21 questions. The data source for the empirical analysis was the database of ICAP, the largest business information and consulting firm in Greece. The ICAP database ([www.findbiz.gr](http://www.findbiz.gr), accessed on 22 June 2022) initially provided a list of all companies operating within each prefecture. A web-based questionnaire was developed to serve as the data collection method and sent to 1100 randomly selected Greek manufacturing and service firms. The questionnaires were distributed to the practitioners via email. Each questionnaire was accompanied by a covering letter that explained the purpose of the survey and offered assurances concerning the privacy and confidentiality of the respondents. The respondents were requested to answer the survey questions based on their experiences and the most recently completed project in

which they were involved and encountered quality issues. This approach allowed for the acquisition of firsthand and up-to-date information regarding the specific project-related challenges and quality issues faced by the respondents. A seven-point Likert scale was utilized to measure all the items in the questionnaire. Respondents were asked to indicate their level of agreement with the items, ranging from '1' (strongly disagree) to '7' (strongly agree). The survey period lasted 6 months, from March 2022 to August of the same year. Two waves of responses were received, one of 207 and one of 163 questionnaires, for a final total of 370. The sample characteristics are presented in Table 1.

**Table 1.** Sample characteristics.

Demographic Characteristics of Sample	Number	Percent
<b>Firm Size (Number of Employees)</b>		
11–49	246	66
50–250	81	22
251–500	43	12
<b>Sector</b>		
Manufacturing	260	70
Services	110	30
<b>Demographic characteristics of respondents</b>		
Male	231	62
Female	139	38
<b>Education</b>		
High school	32	9
University	178	48
Msc/PhD	160	43
<b>Job/Position</b>		
Senior executive	147	40
Manager	223	60
<b>Experience (years)</b>		
<5	110	30
5–10	86	23
>10	174	47

The independent variable OA is measured as the balance between a firm's exploitation and exploration activities. All the items used in this study were drawn from the studies of [78,79]. The dependent variables selected for this study were business performance and SF. Business performance was measured using six items that were drawn from the study of [80] and SF was measured using six items that were drawn from the studies of [63,81].

#### 4.2. Non-Response Bias and Common Method Bias

Two kinds of statistical analysis were employed to assess the potential common method bias (CMB) originating from self-reported measurements. Firstly, we performed a comparison between early and late respondents using a *t*-test. Secondly, we conducted an analysis of variance (ANOVA) among respondents from companies of different sizes and sectors and participants of different genders. No statistically significant differences were found between these groups, suggesting that non-response bias was not likely to be an issue in the final sample. Furthermore, a Harman one-factor test was conducted to ensure the absence of CMB. As a result, the first extracted factor accounted for 26.1% of the variance in the data (<50%). In addition, many items suffered from poor factor loadings, i.e., below 0.4, which were significantly far from the threshold of 0.90. Therefore, overall, the potential effect of CMB was not a major concern in our study [40].

#### 4.3. Analyses

In order to estimate the perceived level of implementation, the mean scores for each of the latent factors were computed and analyzed. Additionally, a correlation matrix was created to examine the bivariate relationships between the four dimensions. The

descriptive statistics and the results of the correlation analysis of the study variables are presented in Table 2. Typically, the correlation coefficients ( $r$ ) between the variables exhibit a certain pattern between 0.3 and 0.90 which indicates that collinearity problems are not present [82]. The study found significant and positive correlations at  $p < 0.01$ , suggesting that the four dimensions are interdependent. As a result, collinearity and multicollinearity were not identified as data issues in this research. In addition, the reliability of the scales was assessed by calculating the Cronbach's alpha coefficient for each scale. The obtained Cronbach's alpha coefficients exceeded the recommended threshold of 0.7 [82], indicating that each factor was measured using sufficiently reliable items.

**Table 2.** Descriptive statistics.

Variables	1	2	3	4
1. Exploration	–			
2. Exploitation	0.709			
3. Business Performance	0.587	0.732		
4. Strategic Flexibility	0.725	0.652	0.713	–
Mean	5.18	5.76	5.80	5.20
S.D.	1.14	0.86	0.81	0.98
Cronbach's Alpha	0.885	0.869	0.881	0.918

Remarks: S.D. = standard deviation;  $p < 0.001$ .

## 5. Results

### 5.1. Measurement Unidimensionality, Reliability, and Validity

This section focuses on the analysis of the scales used in this study, specifically examining their reliability, unidimensionality, convergent validity, and discriminant validity. To assess the factorial structures of the latent factors and the factor loadings of the items, an exploratory factor analysis (EFA) was conducted using SPSS 27.0 [40,83]. Four latent factors were extracted through the EFA (Kaiser–Meyer–Olkin = 0.918, Bartlett's test of sphericity = 2913.780,  $p = 0.00$ , eigenvalue  $> 1$ , MSA  $> 0.80$ , factor loadings  $> 0.60$ ).

Thus, to establish the psychometric properties of the model, a confirmatory factor analysis (CFA) was performed using 21 items. The results of the CFA supported and confirmed the structures and unidimensionality of the latent factors that were initially identified through the EFA. The fit indices for the measurement model indicated the good fit of the model to the data, providing evidence of the reliability and validity of the measurement model (see Table 3).

**Table 3.** Fit indices of measurement model and structural model.

Fit Indices	Measurement Model (CFA)	Structural Model	Levels of Acceptance *
<i>Absolute Fit Indices</i>			
Chi-square ( $\chi^2$ )	409	436	$0 \leq \chi^2 \leq 2 \text{ df}$
Degrees of freedom ( $df$ )	176	177	$> 0$
Root Mean Square Residual (RMR)	0.061	0.067	$< 0.08$
Root Mean Square of Approx. (RMSEA)	0.060	0.063	$< 0.08$
<i>Incremental Fit Indices</i>			
Incremental Fit Index (IFI)	0.957	0.952	$> 0.90$
Tucker–Lewis coefficient (TLI)	0.948	0.942	$> 0.90$
Comparative Fit Index (CFI)	0.956	0.951	$> 0.90$
<i>Parsimonious Fit Indices</i>			
Chi-square / Degrees of Freedom ( $\chi^2 / df$ )	2.327	2.464	$< 3.0$
Parsimonious Normed Fit Index (PNFI)	0.926	0.921	$> 0.50$
Goodness of Fit Index (GFI)	0.904	0.900	$> 0.50$

\* Hair et al. (2006) [82].



In this study, the validity of the scales was evaluated in terms of content, convergent, and discriminant validity. Content validity is checked using composite reliability, and all the values should be higher than 0.70 [82], as is shown in Table 4. In addition, both the review of the literature and the results from the pilot study supported the content validity of the instrument. According to [82], convergent validity refers to the extent to which multiple measures or indicators of the same construct agree with and converge upon each other in their assessment of that construct. To evaluate convergent validity, the factor loadings of the items on their corresponding latent constructs were analyzed. It was found that all factor loadings exceeded the recommended threshold of 0.5 and were significant, with  $p$ -values  $< 0.001$ , which suggests that the items effectively measured their intended constructs. Discriminant validity was assessed by analyzing the extent to which the items contributed to their respective theoretical constructs. To establish discriminant validity, several measures were used, including composite reliability (CR), average variance extracted (AVE), and the square root of AVE. A good measurement model should exhibit good discriminant validity, which can be confirmed by comparing the maximum squared correlation coefficient of each pair of constructs with the minimum AVE value. It was found that all the AVE values were higher than the squared correlations, indicating that the constructs were distinct and effectively differentiated from one another.

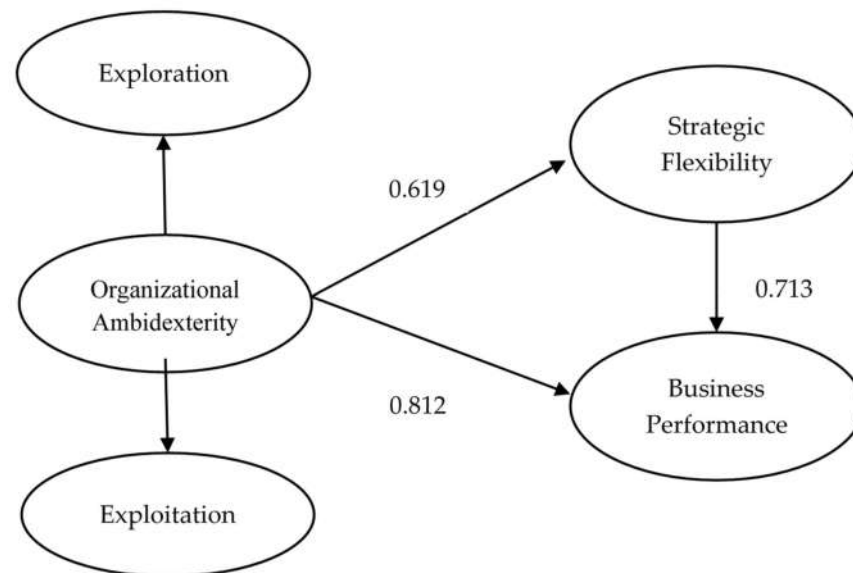
**Table 4.** Evaluation of measurement model.

Constructs	Items	Factor Loading	AVE	CR	Corr <sup>2</sup>
<b>Ambidexterity</b> <i>Exploration</i> <i>Exploitation</i>	Think “outside the box”	0.880	0.661 0.596	0.932 0.927	0.525 0.525
	Explore new technologies	0.866			
	Products or services that are new to the firm	0.746			
	Ventures into new market segments	0.751			
	Improve quality and lower cost	0.753			
	Improve the reliability of products and services	0.885			
	Increase the levels of efficiency in operations	0.728			
	Constantly survey existing customers’ satisfaction	0.693			
	Fine-tune what the firm offers to keep its current customers satisfied	0.790			
<b>Business Performance</b>	Company’s profitability	0.696	0.724	0.869	0.535
	Company’s financial results	0.723			
	Company’s net profit margin	0.783			
	Company’s sales growth during the last three years	0.813			
	Company’s market growth during the last three years	0.655			
	Company’s cash flow	0.674			
<b>Strategic Flexibility</b>	Create options for growth in multiple technological areas	0.730	0.804	0.916	0.525
	React in a modified and viable manner	0.800			
	Pro-actively develop a new project	0.812			
	Build in slack to enable management of unforeseen circumstances	0.812			
	Support the firm’s intended product strategies	0.843			
	Take advantage of opportunities that arise from environmental change	0.827			

### 5.2. Hypotheses Testing

Once the goodness of fit of the measurement model for the total sample was assessed, the next step involved examining the causal relationships between the latent variables and testing the hypotheses (H1–H3) presented in this study. The statistical software program AMOS 6.0 was utilized by applying structural equation modeling (SEM) procedures (maximum likelihood method) to assess and analyze the relationships between the model’s constructs. The estimated standardized parameters for the causal paths are presented in Figure 2. The squared multiple correlations for the endogenous factors were  $R^2 = 0.660$  for SF,  $R^2 = 0.638$  for business performance,  $R^2 = 0.685$  for exploration, and  $R^2 = 0.731$  for exploitation. These results provide insights into the amount of variance in each endogenous construct that can be explained by their preceding constructs. The results of the

statistical analysis support all the hypotheses. The relationship between OA and business performance is positive and significant, thus supporting H1 (H1:  $b = 0.619, p < 0.001$ ). H2 is also supported because OA positively and significantly affects SF (H2:  $b = 0.812, p < 0.001$ ). H3 is further supported by evidence demonstrating that SF has a positive and significant impact on business performance (H3:  $b = 0.713, p < 0.001$ ).



**Figure 2.** Basic structural model for the total sample.

## 6. Discussion and Conclusions

### 6.1. Findings

Our research sheds light on the relatively underexplored areas of OA (exploration and exploitation) and its impact on business performance and SF within Greek firms. Furthermore, an analysis has been conducted to determine how a company's SF affects the established exploitation–exploration model. By providing an extended model tailored to the Greek manufacturing and service industry, our study makes a valuable addition to the existing body of literature on firms' strategic orientations and ambidexterity theory. Moreover, the body of knowledge on SF has been enriched by our demonstration of the distinct advantages of SF for companies adopting an exploitation orientation. This contribution enhances the general understanding of how SF can positively impact companies pursuing such a strategic approach.

Useful insights can be drawn from the demographic characteristics of the research participants. For instance, 91% of the respondents had completed university education. Moreover, 43% of these respondents held postgraduate or doctoral degrees. This indicates that the participants were well-educated and possessed the necessary knowledge to comprehend the questions. Additionally, as is shown in Table 1, 66% of the businesses that responded to the questionnaire were small and medium-sized enterprises (SMEs) with fewer than 49 employees. These SMEs were primarily situated in the manufacturing sector (70%). Previous studies have not adequately addressed the ambidextrous behavior demonstrated by SMEs in relation to constructs such as strategic flexibility (SF) and business performance. The theory and findings of this study suggest that SMEs are inclined to adopt more ambidextrous strategies, particularly when operating under adverse conditions, as compared with larger organizations. Specifically, SMEs exhibit significantly higher levels of explorative behavior than larger organizations, with the exception of emerging exploitation strategies.

In this study, three key research questions were investigated based on a combination of theoretical assumptions and empirical evidence: the relationship between OA and business performance, the relationship between OA and SF, and the impact of SF on

business performance. Since previous research has yielded inconclusive results regarding the connections between these variables, we created a new model to further examine these relationships. Although previous studies have suggested that exploitation and exploration are themselves sequential, our findings indicate that OA functions as a facilitator and consequently enhances business performance. From our analysis, we have concluded that managers should focus on continuous, sequential enhancements to drive business performance. In line with the studies of [84,85], our findings indicate that superior business performance is achieved through the practice of OA, which involves a combination of both explorative and exploitative operational activities (H1). Additionally, our study found a positive relationship between OA and two outcomes, with SF having a greater impact on OA than business performance. These results support Hypotheses H1 and H2, which suggest that SF is a more significant contributor to OA. Balancing exploration and exploitation can be difficult and requires a high degree of SF to respond quickly and effectively to environmental changes. Moreover, the relationship between ambidexterity and business performance is not straightforward. While there is evidence to suggest that ambidextrous firms tend to perform better, the extent of this relationship may depend on factors such as the company's profitability, financial results, and cash flow. Furthermore, achieving ambidexterity may not always translate into immediate business success, and companies may need to be patient and persistent in their efforts. In addition, the results showed that business performance is influenced by SF (H3). Hence, in order to enhance organizational performance in a rapidly changing competitive environment, organizations can prioritize SF and implement high-performance systems as a means to foster SF [21]. For example, through the implementation of practices such as comprehensive training, employees can be equipped with diverse knowledge and skills. This enables organizations to enhance their SF to a significant extent.

### 6.2. Theoretical Implications

This study enables theoretical contributions in three significant ways. First, it empirically connects research on the outcomes of OA, answering the call for additional research in the context of business performance [49] and SF [86]. It provides the first empirical evidence of how the simultaneous imposition of exploration and exploitation can facilitate ambidexterity in two crucial business domains. Second, the findings of this study indicate that OA has a positive impact on business performance, despite the fact that numerous empirical studies on ambidexterity in the past two decades have produced conflicting results regarding its effects on business performance (see, e.g., [87]). This study highlights the possibility of interconnecting exploration and exploitation in a way that strengthens both. It also demonstrates that managers are capable of promoting both of them at the same time by finding the right balance, which requires careful consideration of the available options and the level of uncertainty and risk involved. Third, this study also helps organizations to construct adaptable resource portfolios for both exploration and exploitation, as well as to develop organizational flexibility to transition between the two. By facilitating the translation of ideas into concrete actions, SF enables managers to attain OA. Together, ambidexterity and SF are important components of a company's overall strategic management approach. Our findings extend our understanding of how ambidexterity empowers an organization to balance long-term growth with short-term stability and how SF enables quick responses to changing conditions in order to capitalize on emerging opportunities and stay ahead of the competition.

### 6.3. Managerial Implications

In addition to its theoretical contributions, this study also provides significant managerial implications. First, organizations can gain reliable insights for executives seeking to improve their OA and performance through strategic decision making and resource allocation. A clear implication for managers is the necessity of allocating resources for the achievement of a harmonious balance between exploration and exploitation, emphasiz-

ing the importance of pursuing both in equal measure. In other words, managers must recognize that exploration and exploitation are not competing issues, but rather complementary ones that reinforce each other. It is important that they consider both aspects in their decision-making processes to achieve a balanced and effective approach. Second, concurrently pursuing exploitation and exploration is a major driver for leveraging positive performance effects. The insights derived from our study can assist managers in implementing ambidexterity at various organizational levels and thereby promote a more structured approach to business performance. In particular, our framework can provide guidance to managers on how to effectively orchestrate ambidexterity by utilizing an optimal balance of exploration and exploitation. Third, to achieve OA, organizations should also develop SF. To enable senior management to transmit their knowledge of firm-level ambidexterity, firms may be required to develop responsive SF. Therefore, in dynamic and competitive environments, when organizations aim to enhance their organizational performance, managers can prioritize SF and implement effective mechanisms that foster such flexibility.

#### 6.4. Limitations and Future Research

Despite its many contributions and insights, this study also has some limitations that must be addressed in future research. For example, the sample used in this study only included Greek firms. To extend the validity of the results, it will be essential to conduct empirical studies encompassing a broader range of contexts and countries. Another limitation is that we addressed only two out of the many outcomes of OA. To enhance the model, it will be crucial to incorporate additional outcomes, such as supply chain effectiveness, innovation performance, and quality performance. Additionally, it is essential to further explore the presence of diverse forms of ambidexterity beyond the organization. For instance, studying strategic ambidexterity, innovation ambidexterity, or contextual ambidexterity in terms of induced and autonomous processes or balancing effectiveness and flexibility would be valuable. Finally, future studies should aim to shed light on the barriers that impede SF and thereby contribute to a deeper understanding of this crucial matter.

**Author Contributions:** Conceptualization, E.P.; Methodology, P.K. and A.A.K.; Investigation, E.P.; Data curation, P.K.; Writing—original draft, P.K.; Writing—review & editing, E.P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Ardito, L.; Messeni, A.; Dezi, L.; Castellano, S. The influence of inbound open innovation on ambidexterity performance: Does it pay to source knowledge from supply chain stakeholders? *J. Bus. Resour.* **2020**, *119*, 321–329. [[CrossRef](#)]
2. Pellegrinelli, S.; Murray-Webster, R.; Turner, N. Facilitating organizational ambidexterity through the complementary use of projects and programs. *Int. J. Proj. Manag.* **2015**, *33*, 153–164. [[CrossRef](#)]
3. Lindskog, C.; Magnusson, M. Ambidexterity in Agile software development: A conceptual paper. *J. Organ. Eff. People Perform.* **2021**, *8*, 16–43. [[CrossRef](#)]
4. Alpan, L.; Şanal, M.; Ayden, Y. Market Orientation, Ambidexterity and Performance Outcomes. *Procedia Soc. Behav. Sci.* **2012**, *41*, 461–468. [[CrossRef](#)]
5. Gastaldi, L.; Lessanibahri, S.; Tedaldi, G.; Miragliotta, G. Companies' adoption of Smart Technologies to achieve structural ambidexterity: An analysis with SEM. *Technol. Forecast. Soc. Chang* **2022**, *174*, 121187. [[CrossRef](#)]
6. Fourne, S.P.L.; Rosenbusch, M.; Heyden, M.L.M.; Jansen, J.J.P. Structural and contextual approaches to ambidexterity: A meta-analysis of organizational and environmental contingencies. *Eur. Manag. J.* **2019**, *37*, 564–576. [[CrossRef](#)]

7. Clauss, T.; Kraus, S.; Kallinger, F.L.; Bican, P.M.; Brem, A.; Kaile, N. Organizational ambidexterity and competitive advantage: The role of strategic agility in the exploration-exploitation paradox. *J. Innov. Knowl.* **2020**, *6*, 203–213. [[CrossRef](#)]
8. Schnellbacher, B.; Heidenreich, S.; Wald, A. Antecedents and effects of individual ambidexterity—A cross-level investigation of exploration and exploitation activities at the employee level. *Eur. Manag. J.* **2019**, *37*, 442–454. [[CrossRef](#)]
9. Suharto, S. Supply chain ambidexterity, business performance and mediating role of lean and agile supply chain strategies. *Uncertain Supply Chain Manag.* **2023**, *11*, 557–564. [[CrossRef](#)]
10. Katou, A.A.; Budhwar, P.S.; Patel, C. A trilogy of organizational ambidexterity: Leader’s social intelligence, employee work engagement and environmental changes. *J. Bus. Res.* **2021**, *128*, 688–700. [[CrossRef](#)]
11. He, Z.L.; Wong, P.K. Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organ. Sci.* **2004**, *15*, 481–494. [[CrossRef](#)]
12. Günsel, A.; Altındag, E.; Keçeli, S.K.; Kitapçı, H.; Hızıroğlu, M. Antecedents and consequences of organizational ambidexterity: The moderating role of networking. *Kybernetes* **2018**, *47*, 186–207. [[CrossRef](#)]
13. Pinheiro, L.; Lages, L.F.; Silva, G.M.; Dias, A.L.; Preto, M.T. Effects of absorptive capacity and innovation spillover on manufacturing flexibility. *Int. J. Product. Perform. Manag.* **2022**, *71*, 1786–1809. [[CrossRef](#)]
14. Kortmann, S. The mediating role of strategic orientations on the relationship between ambidexterity: Oriented decisions and innovative ambidexterity. *J. Product. Innov. Manag.* **2014**, *32*, 666–684. [[CrossRef](#)]
15. Rialti, R.; Zollo, L.; Ferraris, A.; Alon, I. Big data analytics capabilities and performance: Evidence from a moderated multi-mediation model. *Technol. Forecast. Soc. Chang.* **2019**, *149*, 119781. [[CrossRef](#)]
16. Jiang, F.; Wang, D.; Wei, Z. How Yin-Yang cognition affects organizational ambidexterity: The mediating role of strategic flexibility. *Asia Pac. J. Manag.* **2021**, *39*, 1187–1214. [[CrossRef](#)]
17. Gerulaitiene, N.; Pundziene, A.; Vaiciukynaite, E. The hidden role of owners’ spouses in family firm innovativeness: A dynamic managerial capabilities perspective. *Balt. J. Manag.* **2020**, *15*, 707–726. [[CrossRef](#)]
18. Brozovic, V. Strategic flexibility: A review of the literature. *Int. J. Manag. Rev.* **2018**, *20*, 3–31. [[CrossRef](#)]
19. Herhausen, D.; Morgan, R.E.; Brozovic, D.; Volberda, H.W. Re-examining strategic flexibility: A meta-analysis of its antecedents, consequences and contingencies. *Br. J. Manag.* **2021**, *32*, 435–455. [[CrossRef](#)]
20. Beltrán-Martín, I.; Roca-Puig, V.; Escrig-Tena, A.; Bou-Lluisar, J.C. Human resource flexibility as a mediating variable between high performance work systems and performance. *J. Manag.* **2008**, *34*, 1009–1044. [[CrossRef](#)]
21. Wang, Y.; Cao, Y.; Xi, N.; Chen, H. High-Performance Work System, Strategic Flexibility, and Organizational Performance—The Moderating Role of Social Networks. *Front. Psychol.* **2021**, *12*, 670132. [[CrossRef](#)] [[PubMed](#)]
22. Sarkees, M.; Hulland, J.; Prescott, J. Ambidextrous organizations and firm performance: The role of marketing function implementation. *J. Strateg. Mark.* **2010**, *18*, 165–184. [[CrossRef](#)]
23. Katou, A.A.; Kafetzopoulos, D.; Vayona, A. Investigating the serially mediating mechanisms of organizational ambidexterity and the circular economy in the relationship between ambidextrous leadership and sustainability performance. *Sustainability* **2023**, *15*, 7937. [[CrossRef](#)]
24. Kafetzopoulos, P.; Psomas, E. Investigating the factors that influence the ambidexterity of agricultural companies. *Int. J. Sustain. Agric. Manag. Inform.* **2023**, *in press*.
25. Gibson, C.B.; Birkinshaw, J. The antecedents, consequences, and mediating role of organizational ambidexterity. *Acad. Manag. J.* **2004**, *47*, 209–226. [[CrossRef](#)]
26. Hafkesbrink, J.; Schroll, M. Ambidextrous organizational and individual firms. *Br. J. Manag.* **2014**, *25*, 58–76.
27. Shamim, S.; Zenga, J.; Choksy, U.S.; Shariq, S.M. Connecting big data management capabilities with employee ambidexterity in Chinese multinational enterprises through the mediation of big data value creation at the employee level. *Int. Bus. Rev.* **2020**, *29*, 101604. [[CrossRef](#)]
28. Jansen, J.J.; Van den Bosch, F.A.; Volberda, H.W. Exploratory innovation, exploitative innovation, and ambidexterity: The impact of environmental and organizational antecedents. *Schmalenbach Bus. Rev.* **2009**, *57*, 351–363. [[CrossRef](#)]
29. March, J. Exploration and exploitation in organizational learning. *Organ. Sci.* **1991**, *2*, 71–87. [[CrossRef](#)]
30. Zhang, Q.; Pan, J.; Feng, T. Green supplier integration and environmental performance: Do environmental innovation and ambidextrous governance matter? *Int. J. Phys. Distrib. Logist. Manag.* **2020**, *50*, 693–719. [[CrossRef](#)]
31. Chandrasekaran, A.; Linderman, K.; Schroeder, R. Antecedents to ambidexterity competency in high technology organizations. *J. Oper. Manag.* **2012**, *30*, 134–151. [[CrossRef](#)]
32. Josephson, W.B.; Johnson, L.J.; Mariadoss, J.B. Strategic marketing ambidexterity: Antecedents and financial consequences. *J. Acad. Mark. Sci.* **2016**, *44*, 539–554. [[CrossRef](#)]
33. Haarhaus, T.; Liening, A. Building Dynamic Capabilities to Cope with Environmental Uncertainty: The Role of Strategic Foresight. *Technol. Forecast. Soc. Chang.* **2020**, *155*, 120033. [[CrossRef](#)]
34. Van de Wetering, R. Achieving Digital-Driven Patient Agility in the Era of Big Data. In Proceedings of the 20th IFIP Conference e-Business, e-Services, and e-Society, I3E2021, Galway, Ireland, 1–3 September 2021.
35. Tamjid, H.; Rakhshani, J. Strategic Flexibility and Organizational Ambidexterity: The Mediating Role of Critical Thinking. *Eur. J. Stud. Manag. Bus.* **2022**, *24*, 53–61. [[CrossRef](#)]



36. Yousuf, A.; Lorestani, V.Z.; Oláh, J.; Felföldi, J. Does Uncertainty Moderate the Relationship between Strategic Flexibility and Companies' Performance? Evidence from Small and Medium Pharmaceutical Companies in Iran. *Sustainability* **2021**, *13*, 9157. [[CrossRef](#)]
37. Sanchez, R. Strategic flexibility in product competition. *Strateg. Manag. J.* **1995**, *16*, 135–159. [[CrossRef](#)]
38. Agwu, E. Analysis of the impact of strategic management on the business performance of SMEs in Nigeria. *Acad. Strateg. Manag.* **2018**, *17*, 1–20.
39. Gyedu, S.; Tang, H.; Ntarmah, A.H.; Manu, E.K. The moderating effect of environmental turbulence on the relationship between innovation capability and business performance. *Int. J. Innov. Sci.* **2020**, *13*, 456–476. [[CrossRef](#)]
40. Kafetzopoulos, D.; Psomas, E.; Skalkos, D. Innovation dimensions and business performance under environmental uncertainty. *Eur. J. Innov. Manag.* **2020**, *23*, 856–876. [[CrossRef](#)]
41. Tseng, M.L.; Tan, R.R.; Siriban-Manalang, A.B. Sustainable consumption production for Asia: Sustainability through green design practice. *J. Clean. Prod.* **2013**, *40*, 1–5. [[CrossRef](#)]
42. Gupta, V.K.; Wales, W.J. Assessing organizational performance within entrepreneurial orientation research: Where have we been and where can we go from here? *J. Entrep.* **2017**, *26*, 51–76.
43. Battor, M.; Battor, M. The impact of customer relationship management capability on innovation and performance advantages: Testing a mediated model. *J. Mark. Manag.* **2010**, *26*, 842–857. [[CrossRef](#)]
44. Al Mamun, A.; Fazal, S.A. Effect of entrepreneurial orientation on competency and microenterprise performance. *Asia Pac. J. Innov. Entrep.* **2018**, *12*, 379–398.
45. Kafetzopoulos, D.; Gotzamani, K. Investigating the role of EFQM enablers in innovation performance. *TQM J.* **2019**, *31*, 239–256. [[CrossRef](#)]
46. Ayimey, E.K.; Blomme, R.J.; Kil, A.; Honyenuga, B.Q. Insight into How Market Orientation Impacts Marketing Performance in the Hotel Industry of Ghana. In *Advances in Hospitality and Leisure*; Chen, J.S., Ed.; Emerald Publishing Limited: Bingley, UK, 2020; Volume 16, pp. 115–140.
47. Kyazze, L.M.; Nsereko, I.; Nkote, I. Cooperative practices and non-financial performance of savings and credit cooperative societies. *Int. J. Ethics Syst.* **2020**, *36*, 411–425. [[CrossRef](#)]
48. Raisch, S.; Birkinshaw, J. Organizational ambidexterity: Antecedents, outcomes, and moderators. *J. Manag.* **2008**, *34*, 375–409. [[CrossRef](#)]
49. Mura, M.; Micheli, P.; Longo, M. The effects of performance measurement system uses on organizational ambidexterity and firm performance. *Int. J. Oper. Prod. Manag.* **2021**, *41*, 127–151. [[CrossRef](#)]
50. Kumkale, İ. Field Study to Evaluate the Effect of Strategic Leadership and Organizational Ambidexterity on Organizational Agility. In *Organizational Mastery. Accounting, Finance, Sustainability, Governance & Fraud: Theory and Application*; Springer: Singapore, 2022.
51. Mathias, B.D.; Mckenny, A.F.; Crook, T.R. Managing the tensions between exploration and exploitation: The role of time. *Strateg. Entrep. J.* **2017**, *12*, 316–334. [[CrossRef](#)]
52. Wolf, T.; Cantner, U.; Graf, H.; Rothgang, M. Cluster ambidexterity towards exploration and exploitation: Strategies and cluster management. *J. Technol. Transf.* **2019**, *44*, 1840–1866. [[CrossRef](#)]
53. Shi, X.; Su, L.; Cui, A.P. A meta-analytic study on exploration and exploitation. *J. Bus. Ind. Mark.* **2020**, *35*, 97–115. [[CrossRef](#)]
54. Lubatkin, M.H.; Simsek, Z.; Ling, Y.; Veiga, J.F. Ambidexterity and performance in small- to medium-sized firms: The pivotal role of top management team behavioral integration. *J. Manag.* **2006**, *32*, 646–672. [[CrossRef](#)]
55. Caspin-Wagner, K.; Ellis, S.; Tishler, A. Balancing exploration and exploitation for firm's superior performance: The role of the environment. *Acad. Manag.* **2012**, *2012*, 17177. [[CrossRef](#)]
56. Andriopoulos, C.; Lewis, M.W. Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organ. Sci.* **2009**, *20*, 696–717. [[CrossRef](#)]
57. Peng, Y.; Lin, K.; Peng, D.; Chen, P. Linking Organizational Ambidexterity and Performance: The Drivers of Sustainability in High-Tech Firms. *Sustainability* **2019**, *11*, 3931. [[CrossRef](#)]
58. Castellano, S.; Khelladi, I.; Ivanaj, S. Entrepreneurial Intensity and Firm Performance: The Role of Institutional Ambidexterity. *IEEE Trans. Eng. Manag.* **2021**, *68*, 350–359. [[CrossRef](#)]
59. Tamayo-Torres, J.; Roehrich, K.J.; Lewis, A.M. Ambidexterity, performance and environmental dynamism. *Int. J. Oper. Prod. Manag.* **2016**, *37*, 282–299. [[CrossRef](#)]
60. O'Reilly, C.A.; Tushman, M.L. Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Res. Organ. Behav.* **2008**, *28*, 185–206. [[CrossRef](#)]
61. Jurksiene, L.; Pundziene, L. The relationship between dynamic capabilities and firm competitive advantage: The mediating role of organizational ambidexterity. *Eur. Bus. Rev.* **2016**, *28*, 431–448. [[CrossRef](#)]
62. Hazen, B.; Bradley, R.; Bell, J.; In, J.; Byrd, T. Enterprise architecture: A competence-based approach to achieving agility and firm performance. *Int. J. Prod. Econ.* **2017**, *193*, 566–577. [[CrossRef](#)]
63. Dai, Y.; Goodale, J.C.; Byun, G.; Ding, F. Strategic flexibility in new high-technology ventures. *J. Manag. Stud.* **2018**, *55*, 265–294. [[CrossRef](#)]
64. O'Cass, A.; Heirati, N.; Ngo, L.V. Achieving new product success via the synchronization of exploration and exploitation across multiple levels and functional areas. *Ind. Market. Manag.* **2014**, *43*, 862–872. [[CrossRef](#)]

65. Aslam, H.; Blome, C.; Roscoe, S.; Azhar, T.M. Dynamic supply chain capabilities: How market sensing, supply chain agility and adaptability affect supply chain ambidexterity. *Int. J. Oper. Prod. Manag.* **2018**, *38*, 2266–2285. [[CrossRef](#)]
66. Chan, A.; Ngai, E.; Moon, K. The effects of strategic and manufacturing flexibilities and supply chain agility on firm performance in the fashion industry. *Eur. J. Oper. Res.* **2017**, *259*, 486–499. [[CrossRef](#)]
67. O'Reilly, C.A.; Tushman, M.L. Organizational ambidexterity: Past, present, and future. *Acad. Manag. Perspect.* **2019**, *27*, 324–338. [[CrossRef](#)]
68. Teece, D.; Peteraf, M.; Leih, S. Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *Calif. Manag. Rev.* **2016**, *58*, 13–35. [[CrossRef](#)]
69. Sanchez, R. Preparing for an uncertain future: Managing organizations for strategic flexibility. *Int. Stud. Manag. Organ.* **1997**, *27*, 71–94. [[CrossRef](#)]
70. Cao, Y.; Xu, B.; Xi, N. High-performance work system and strategic flexibility: A moderated mediation model. *Hum. Resour. Dev.* **2018**, *35*, 43–52.
71. Hoeft, F. The three dimensions of strategic flexibility. *Int. J. Organ. Anal.* **2021**, *37*, 24–27. [[CrossRef](#)]
72. Li, W.N.; Kang, Y.; Lv, Y. Research on the relationship between TMT team atmosphere, strategic flexibility and corporate performance in a dynamic environment. *Chin. J. Manag.* **2016**, *13*, 195–202.
73. Lin, Y.Q.; Zhao, S.M. Human resource practice, strategic flexibility and corporate performance for building social networks of senior management teams—The moderating effect of environmental uncertainty. *Nankai Manag. Rev.* **2013**, *16*, 4–15.
74. Sáenz, M.J.; Knoppen, D.; Tachizawa, E.M. Building manufacturing flexibility with strategic suppliers and contingent effect of product dynamism on customer satisfaction. *J. Purch. Supply Manag.* **2018**, *24*, 238–246. [[CrossRef](#)]
75. Arunachalam, S.; Ramaswami, N.S.; Patel, C.P.; Chai, L. Innovation-based strategic flexibility (ISF): Role of CEO ties with marketing and R&D. *Int. J. Res. Mark.* **2022**, *39*, 927–946.
76. Klibi, W.; Martel, A.; Guitouni, A. The design of robust value-creating supply chain networks: A critical review. *Eur. J. Oper. Resour.* **2010**, *20*, 283–293. [[CrossRef](#)]
77. Wei, Z.; Song, X.; Wang, D. Manufacturing flexibility, business model design, and firm performance. *Int. J. Prod. Econ.* **2017**, *193*, 87–97. [[CrossRef](#)]
78. Koryak, O.; Lockett, A.; Hayton, J.; Nicolaou, N.; Mole, K. Disentangling the antecedents of ambidexterity: Exploration and Exploitation. *Res. Policy* **2018**, *47*, 413–427. [[CrossRef](#)]
79. Kafetzopoulos, D. Organizational ambidexterity: Antecedents, performance and environmental uncertainty. *Bus. Process Manag. J.* **2021**, *27*, 922–940. [[CrossRef](#)]
80. Kafetzopoulos, D.; Psomas, E.; Gotzamani, K. The impact of quality management systems on the performance of manufacturing firms. *Int. J. Qual. Reliab. Manag.* **2015**, *32*, 381–399. [[CrossRef](#)]
81. Fan, Z.; Wu, D.; Wu, X. Proactive and reactive strategic flexibility in coping with environmental change in innovation. *Asian J. Technol. Innov.* **2013**, *21*, 187–201. [[CrossRef](#)]
82. Hair, J.F.; Black, W.C.; Babin, B.J.; Anderson, R.E.; Tatham, R.L. *Multivariate Data Analysis*, 6th ed.; Pearson Prentice-Hall: Upper Saddle River, NJ, USA, 2006.
83. Gunday, G.; Ulusoy, G.; Kilic, K.; Alpkan, L. Effects of innovation types on firm performance. *Int. J. Prod. Econ.* **2011**, *133*, 662–676. [[CrossRef](#)]
84. Priyanka Jain, M.; Dhir, S. Antecedents of organization ambidexterity: A comparative study of public and private sector organizations. *Technol. Soc.* **2022**, *70*, 102046. [[CrossRef](#)]
85. Severgnini, E.; Vieira, V.; Galdamez, E. The indirect effects of performance measurement system and organizational ambidexterity on performance. *Bus. Process Manag. J.* **2018**, *24*, 1176–1199. [[CrossRef](#)]
86. Doz, Y.L.; Kosonen, M. Embedding strategic agility: A leadership agenda for accelerating business model renewal. *Long Range Plan.* **2010**, *43*, 370–382. [[CrossRef](#)]
87. Junni, P.P.; Sarala, R.M.; Taras, V.; Tarba, S.Y. Organizational ambidexterity and performance: A metaanalysis. *Acad. Manag. Perspect.* **2013**, *27*, 299–312. [[CrossRef](#)]

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