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A Review of Strategic Ambidexterity in Product Innovativeness

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Abstract

To enhance the level of product innovativeness in various countries, one solution that can be taken is to apply strategic ambidexterity, since strategic ambidexterity is important for enhancing product innovativeness due to limited resources ,the dynamic nature of markets and the need to balance exploration and exploitation activities, by simultaneously focusing on both incremental improvements to existing products and exploring new opportunities, capabilities, and resources to produce new products , SMEs can adapt to changing customer preferences and technological advancements effectively and enhance the level of product innovativeness this article reviews previously published research which linked strategic ambidexterity to product innovativeness. The steps of this review include searching, screening, evaluating, and synthesizing. According to the findings of this review, this study fills the gap in the literature by absorbing and integrating variables from various theoretical frameworks.

Keywords: Literature Review, Strategic Ambidexterity, Exploration, Exploitation, Product Innovativeness

Introduction

In the current landscape of global competition, rapid technological development, political and economic changes, and the effect of Covid 19 dramatically affected all companies and activities in all countries of the world, the pandemic has caused uncertainty and instability, which has significant and essential disruption of the company's environment (Altig et al., 2020). The COVID-19 pandemic has taken its toll on product innovativeness in small- and medium sized enterprises. SMEs play a crucial role in driving economic growth, yet their smaller scale makes them particularly vulnerable to crises(Pan et al., 2024). SMEs are under increasing pressure to innovate and response to dynamic market conditions, more than ever before, the value of product innovativeness has emerged. Product innovativeness can provide a competitive advantage and it is a general economy engine. Product innovativeness is essential to raising the standard of living and promoting human well-being (Edwards-

Schachter et al., 2012). companies may rise in wellbeing because of their innovative potential and capabilities (Koo et al., 2020).

The concept of strategic ambidexterity has emerged as a crucial framework for companies attempting to maintain a balance between their exploration and exploitation strategies in this dynamic environment (Ali et al., 2024). On the other hand, traditional approaches of product innovativeness are becoming less effective in today's dynamic market, organizations need to be able to explore new prospects and exploit their current resources at the same time (Jaidi et al., 2022) .Furthermore, the effectiveness of these capacities might depend on the current state of market dynamics, therefore a detailed comprehension of the contextual factors that influence their impact.

Although strategic ambidexterity is becoming more widely recognized in organizational literature, there is still a lack of study on how these factors interact and affect product innovativeness. Understanding how companies can effectively leverage strategic ambidexterity to drive product innovativeness is a significant issue that has broad affects for both theoretical approach and practical approach.

Literature Review

Product Innovativeness

Product innovativeness has grown and Studies on innovation are still significant especially in (SMEs) in the context of developing countries such as Jordan the small and medium industrial (SMEs) makes significant contributions to the Jordanian economy (Al-Okaily, 2023). The small and medium industrial companies are considered one of the growing sectors over the past few years (Al-Khatib, 2023). SMEs enhance sustainable development in developing countries and communities (Ndubisi et al., 2021). As a result, it generates new job possibilities in addition to enabling these businesses to expand into new worldwide markets and innovate products, Therefore, the competitive advantage of these firms largely depends on product innovativeness.

Studies on product innovation are significant, but no widely recognized definition that is generally well accepted can be constructed. due to the variations in the perspectives and experiences of every researcher (Distanont & Khongmalai, 2020). In the past Schumpeter defined innovation as like new approaches to exploiting a company's current resources to create new things like new products, new production techniques, new suppliers or raw material sources, the use of new markets, and new business management strategies (Schumpeter, 1949).Product Innovativeness defined as : The degree to which a new product is novel and has generative potential is known as product innovativeness (Brockman & Morgan, 2003).

Innovation involves four diverse fields: market innovation, product, organization, and process (Lundvall, 1992). Product innovativeness is more important than market innovation, organizational changes, and process optimization for industrial SMEs since it directly affects competitiveness, revenue growth, customer happiness, and the sustainability of the business (Aziz & Samad, 2016; Wang & Ahmad, 2024) . The selection of various combinations of innovation strategies is essential in the face of diminishing and limited resources to accomplish innovation goals, such as the launch of new products or innovative business models. A company may decide to implement any of the pure innovation types of products,

process, marketing, or organizational innovation or any combinations of them as part of its innovation strategy to gain a competitive advantage (Agwu et al., 2020) .

Product innovativeness affects significant aspects of performance, such as market and financial and enhances the company's level of innovation (Al-Sa'di et al., 2017). While there are many different determinants that influence innovation, the results typically include a firm's competitive advantage, performance, growth, and new product success (Dong et al., 2024; Ferreira et al., 2020). Business firms compete based on new products with new features, new designs, and new functions intended to improve product performance as well as differentiation. If firms want to stay competitive, they can't just keep selling the same items forever or just compete on old-fashioned criteria like price and quality Especially for industrial companies, going to market early through product innovativeness, increases market dominance. It also increases the firm's long-term competitive strength.

In the context of product innovativeness, prior research has highlighted the positive effect of innovativeness on performance (Huang et al., 2023; Rumanti et al., 2023; Wang & Ahmad, 2024). Many studies indicate that a company can strengthen its market position by leapfrogging competitors, create entry barriers, establishing a leadership position, opening new distribution channels, and attracting new clients through product innovation (Chandy & Tellis, 2000). The results of this literature review suggest that inventive activities are critical to an organization's effectiveness or success. While product innovativeness can lead to better performance, some scholars argue that it can also be very costly, risky, and have a negative impact on financial performance, particularly for smaller businesses, financial performance is likely to adversely if the innovation fails in the marketplace (Markham & Griffin, 1998).

On the other hand, some studies argue that SMEs are dynamic, entrepreneurial businesses that are prepared to utilize new market opportunities, product innovativeness is emphasized as a significant strategy for firm to attain sustainability, but firms frequently fail to implement corporate innovation well (Hattar, 2020). This study suggests that strategic ambidexterity may help industrial SMEs navigate the challenges of product innovativeness by creating a flexible and responsive organizational structure. This approach ensures that the industrial companies can simultaneously explore new opportunities while exploiting existing capabilities, reducing the likelihood of product innovativeness failures.

The literature review shows that many researchers extended their research in the factors that drive the product innovativeness to provide comprehensive view of product innovativeness Table 1 summarizes of product innovativeness in previous studies.

Table 1
Review of Product Innovativeness Studies

Author	Theory	Context	Variable	Finding of the study
Brockman and Morgan (2003)	Organizational learning	1,186 of firms listed within the national register	**IV**: Entrepreneurship - Existing knowledge - Cohesiveness **DV:** new product innovativeness - new product performance	- A strong link has been established between All dimensions of Entrepreneurship and new product performance.

Atuahene-Gima (2005)	-Resource based view theory - Marketing theory	500 Chinese firms	**Iv:** -Customer orientation -Competitor orientation **Mediator:** Competence exploration -Competence exploitation **DV:** Incremental innovation performance - Radical innovation performance	- Both customer orientation and competitor orientation have a strong impact on allocating resources to exploit existing product innovation competences and developed new one. - Differential direct and interaction effects of competence exploitation and exploration on product innovation performance is particularly significant
Tsou et al. (2014)	- Marketing theory. - Strategic innovation theory	533 firm information technology (IT) industry sector in Taiwan	**IV**: Market orientations: - Proactive market orientation - Responsive market orientation -Technology orientation **Mediator:** Exploratory innovative competence -Exploitative innovative competence **DV**: Service delivery innovation	- Firm's market and technology orientations influence the nature and the extent of innovative competence - Emphasis on EEIC (exploitative innovative competence) Leads to service delivery innovation. - EYIC (exploratory innovative competence) has a non-significant effect on service delivery innovation.

Barba-Aragón and Jiménez-Jiménez (2020)	- Social exchange theory	3,685 Spanish industrial firms	**IV:** HRM system **MV:** Competence exploration **DV:** radical innovation	- No positive evidence that supports the effect of HRM systems on radical innovation - Ccompetence exploration has a positive effect on radical innovation - The mediating role of competence exploration positively explain the competence exploration construct
Dabić et al. (2021)	Entrepreneurship theory	500 micro and small businesses in Serbia operating in all industries	**IV**: Intellectual agility employees **MV**: entrepreneurial leadership - Future orientation - Building community **DV**: Mmicro and small businesses' innovativeness	- No direct effect of intellectual agility of employees on micro and small businesses' innovativeness. - Significant and positive indirect effects going through both dimensions orientation and building community dimensions of entrepreneurial.
Franco and Landini (2022)	Self-determination theory	European Company 18,000 non-agricultural establishments and located in 28 countries	**IV**: workforce agility **DV**: Product innovation **-** Process innovation	- positive relationship between workforce agility and both product and process innovation
Wang et al. (2023)	Dynamic capability theory	347 Chinese firms	**Iv:** Platform capability: -integration capability -Reconfiguration capability	- Digital platforms capabilities have significant positive impact on sustainability-

			Mediator: Open innovation -Inbound open innovation -Outbound open innovation **DV**: Sustainability oriented innovation	oriented innovation. - Inbound and outbound open innovation have mediating role in the relationship between digital platforms capabilities and sustainability-oriented innovation.
Fan et al. (2023)	-Resource based view theory - The principal-agent theory	3453 companies in China	**IV:** Digital strategic orientation **DV**: innovation output	- Digital strategic orientation positively influences innovation output.
Tian and Yang (2023)	-The system dynamics theory	Mobile application (app) software products the top 500 best-selling apps in the iOS App Store	**IV:** Online customer review - The number of online Reviews - The sentiment of online Reviews **DV**: Product iterative innovation	- Positive relationship between the number of online reviews and the product iterative innovation. - Positive relationship between sentiment of online reviews and the iterative innovation performance
Baccarella et al. (2022)	-Theory of organizational creativity	255 manufacturing firms in Germany	**IV:** Organizational support for creativity **Moderator:** Market dynamism **Mediator:** Firms' innovation performance **DV:** Market performance	- In highly dynamic markets, organizational support for creativity positively influences firms' innovation performance and positively influences market performance.

Ranjan (2024)	- Resource-based view theory -Dynamic capability theory	324 high-tech small and medium-sized enterprises functioning in India	**IV:** Digital orientation **Moderator:** - Digital business capability -Environmental dynamism **DV:** Innovation performance	- Digital business capability positively moderates the relationship between digital orientation and innovation performance. - Direct relationship between digital orientation and innovation performance is stronger under higher digital business capability. - Digital business capability has a higher impact on the digital orientation and innovation performance link under high environmental dynamism.
Zhang et al. (2020)	Dynamic capability theory -resource dependence theory -contingency theory	218 industrial firms from China	**IV:** Business ties -political ties **Mediator:** Entrepreneurial orientation **Moderator:** Environmental dynamism **DV:** Innovation performance	- Environmental dynamism moderates the indirect relationships of network ties with innovation performance through EO - Business ties directly influence EO and indirectly influence innovation performance through EO - The indirect effects of business and political ties

				on innovation performance through EO are more significant in dynamic environment
Leite and Braz (2016)	Not specified	Three case studies with industrial equipment producers in Portugal	**IV:** Agile manufacturing practices **DV:** New product development	- Agile practices contribute positively to operating performance and new product development.
Arnold et al. (2011)	Organizational design theory	335 financial services and retail industries.	**IV:** Customer Acquisition Orientation **Mediator:** - Customer Knowledge Development -Resource Configuration Decisions: Resource Exploration Resource Exploitation **DV:** Radical innovation performance -Incremental innovation performance	- Increasing the focus on customer Retention enhances incremental innovation performance through resource exploitation. - Resource exploration positively influences radical innovation. and negatively relates to incremental innovation. - Resource exploitation negatively influences radical innovation and positively influences incremental innovation.

Strategic Ambidexterity

In today's dynamic environment, product innovativeness cannot be left to chance, firms must carefully construct their innovation strategies to encourage innovative products to move in the correct direction that are in line with organizational resources by providing the right vision of customers' needs competition movements, and technical developments. This is why strategic ambidexterity is necessary, ambidexterity is widely acknowledged as vital to product

innovativeness in today's highly competitive market environment because it enables organizations to achieve radical innovation through exploration strategies and incremental innovation through exploitation strategies. Strategic ambidexterity aligns with the organization's overall strategic goal to ensure that both exploration and exploitation contribute to the accomplishment of the organization's mission and objectives (Peters & Buijs, 2022; Turner et al., 2017) .

Strategic ambidexterity is defined as a concept in organizational management and strategy that refers to capability to reconcile two opposite strategies simultaneously and effectively integrate both exploration and exploitation strategies (Khan et al., 2022).

According to literature review some studies explained the dimensions of strategic ambidexterity exploration and exploitation as strategies (Bernal et al., 2019; Chou et al., 2024; Clauss et al., 2021; Kim & Atuahene-Gima, 2010; Sirén et al., 2012; Wu et al., 2020) other studies explained exploration and exploitation as activities (Hubner et al., 2022; Jaidi et al., 2022; Lennerts et al., 2020; Voss & Voss, 2013) The last one explained exploration and exploitation as capabilities (Ali et al., 2024; Iborra et al., 2020; Jacob et al., 2022; Mccarthy & Gordon, 2011) this study based on dynamic capability and resource-based view theories will argue exploration and exploitation (strategic ambidexterity) as capabilities.

The ability of a company to integrate, develop, and reconfigure internal and external competences in response to quickly changing environments referred to dynamic capability (Teece et al., 1997). It entails exploring and seizing opportunities of opportunities as well as skilfully addressing risks. Organizations need dynamic capabilities to innovate and adapt in fast-paced, cutthroat environments. On the other hand, Resource-Based View (RBV) in strategic management emphasizes a company's internal resources and capabilities as sources of competitive advantage. It highlights the fact that not all resources are created equal and that resources that are rare, precious, difficult to imitate, and non-replaceable provide a long-term competitive advantage (Barney, 1991). In the context of dynamic capability and RBV, exploration is crucial capability it enables companies to continuously search for opportunities to enhance their product innovativeness that contribute to their competitive advantage

This study focuses on exploration and exploitation as a capability that by which SMEs learn to simultaneously undertake exploration and exploitation balancing exploration and exploitation are a critical challenge that is particularly difficult for smaller, medium organizations that lack the resources, capabilities, and experience necessary to successfully implement ambidexterity. In turn, this can contribute to the development of ambidexterity as a critical element of SMEs' capabilities, enhancing their innovativeness and competitiveness (Chang et al., 2011; Chang & Hughes, 2012).

The literature review shows that many researchers extended their research in the strategic ambidexterity and how it drives the product innovativeness to provide comprehensive view of product innovativeness. Table 2 summarizes strategic ambidexterity in previous studies.

Table 2
Review of Strategic Ambidexterity Studies.

Author	Theory	Context	Variable	Finding of the study
Voss and Voss (2013)	- Organizational learning theory - Contingency theory	Theatres Communications Group in the United States	**IV:** Cross-functional ambidexterity:	- Product ambidexterity has positive effects on revenue for

	- Resource dependence theory - Diffusion Theory	107 theaters with complete information for all three years, 37 theaters with information for two years, and 29 theaters with information for one year	- Product exploitation and market exploration - Product exploration and market exploitation **Moderator:** -Firm size - Firm age **DV:** SME revenue performance	older and larger firms. - Market ambidexterity has positive effects on revenue for larger firms. - Product exploitation and market exploration have a positive impact on revenue performance.
Tamayo-Torres et al. (2014)	Quality management theory	1850 Organizations operating in the Spanish manufacturing sector	**IV:** Manufacturing flexibility: - Routing flexibility - Material handling flexibility - Machine flexibility **DV:** -Exploration and exploitation Strategies **Outcome DV**: - Organizational learning	- All the relationships between the dimensions of manufacturing flexibility and exploitation and exploration strategies to be significant except one (routing flexibility for exploration strategy). For firms without ISO 9001:2000 - The dimension of material handling flexibility is significantly related to both exploration and exploitation strategies in ISO firms. - Positive and significant relationship between exploitation and exploration strategies and

				organizational learning
Rosing and Zacher (2017)	Ambidexterity theory of leadership for innovation. -Innovation paradox theory	Firms in Australia	**IV**: Individual ambidexterity: the duality of exploration and exploitation **DV:** Innovative performance	- Both exploration and exploitation at the individual level and similar extent, have positive effect on innovative performance. - The significance of individual ambidexterity for innovative performance.
Bernal et al. (2019)	Dynamic capability	Spanish manufacturing and service firms	**IV:** Exploration, exploitation **Moderator**: Industry evolution: - market evolution - technology evolution **DV:** Innovation performance	- Technological evolution develops exploration strategies the firms can obtain better innovation performance. - Rapid technology evolution does not have any significant effect on the relationship between exploitation and innovation performance.
Lennerts et al. (2020)	Organizational learning theory	171 Manufacturers In Switzerland	**IV**: Interaction of exploitation and exploration **DV:** Incremental and radical innovation performance	- Interaction between exploitation and exploration has a positive affect incremental innovation performance. - Radical innovation performance is solely driven by exploration.

Wu et al. (2020)	Dynamic capability theory	250 Chinese MNEs Chinese indigenous firms, and foreign MNEs in China: Beijing, Shanghai, and Shenzhen	**IV:** Strategic ambidexterity of exploration and exploitation **Moderator:** Managerial capability **DV**: Innovation performance	- Ambidexterity has positive effect on Chinese MNEs' innovation performance. - Managerial capability increases the positive effect of ambidexterity on Chinese MNEs' innovation performance.
Jacob et al. (2022)	Dynamic Capability theory	109 SMEs in the Indonesian footwear industry	**IV:** - Intra-cluster ties - Extra-cluster ties - Risk taking **Mediator**: Ambidexterity **DV**: Innovation Performance	- Significant affect risk taking for developing ambidexterity - SMEs that are ambidextrous has positive affect innovation.
Hubner et al. (2022)	Entrepreneurship theory	6 large companies In China. 34 companies of small to large enterprises in India. 27 companies of small to large Size in Singapore	**IV:** Culture differences **Mediator:** -Team exploration activity - Team exploitation activity **DV:** Team innovativeness	- National culture effect on teams focusing s on either exploration or exploitation. - Indian teams showed higher team exploration, and Chinese teams' higher team exploitation, when comparing China, India, and Singapore
Jaidi et al. (2022)	- Social network theory - Innovation theory	SMEs of Taiwan and Indonesia 101 respondents were from Indonesia and 123 samples were from Taiwan	**IV:** - Social network **Mediator:** Ambidexterity **Moderator:** - Proactiveness	- Social networks have a positive effect on ambidexterity - proactiveness moderates the relationship between social

			- Commitment to innovation **DV**: Innovation performance.	networks and ambidexterity - Ambidexterity has a positive effect on innovation performance - Commitment to innovation moderates the relationship between ambidexterity and innovation performance - Ambidexterity mediates the relationship between social networks and innovation performance
Ali et al. (2024)	-Resource based view theory -Dynamic Capabilities theory	292 manufacturing firms in Pakistan	**IV:** Marketing capabilities: -Inside-out marketing capabilities -Outside-in marketing capabilities **DV:** Market ambidexterity **Outcome:** Product innovation	- Market ambidexterity positively influences product innovation outcomes. - Inside-out marketing capabilities have a greater inclination toward market exploitation rather than exploration. - Capabilities synergizing have positive influence market ambidexterity.

Discussion

As stated in Table 1, product innovativeness has been studied in different contexts in developed and developing countries. As different variables are used to determine product innovativeness; some of these variables are important in certain studies but they can have no effect in other studies because it is depending on country of study, where these variables used can be different from one country to another. therefore, they should be adapted to the

context of countries. For example, no direct effect of intellectual agility of employees on micro and small businesses' innovativeness in Serbia (Dabić et al., 2021), but there is a positive relationship between workforce agility and both product and process innovation in European Companies (Franco & Landini, 2022). Additionally, most of these studies used dynamic capability, and resource-based view framework to represent the innovativeness context. One justification for this might be that Resource-based theory and dynamic capability theory provide comprehensive insights into how companies create and maintain competitive advantage through innovation, Resource-Based Theory (RBT) and Dynamic Capability Theory (DCT) are widely used in the conceptualization of product innovation. RBT highlights how important it is for a company to have its own resources and capabilities, as these are essential for creating innovative product (Barney, 1991). DCT, on the other hand, concentrates on a company's capacity to adapt, integrate, and reorganize these assets in reaction to shifting market circumstances, guaranteeing continuous innovation (Teece et al., 1997) . When combined, these theories offer a thorough framework for comprehending the skills and resource management required for enhancing the level of product innovation in dynamic environments.

Conclusions

From the narrative review done, we conclude our findings. Strategic ambidexterity has been demonstrated to enhance product innovativeness and exploration and exploitation are significant capabilities impacting product innovativeness. industrial companies need strategic ambidexterity to develop new capabilities and utilise its existing ones to maximize efficiency in a constantly changing business environment. SMEs require ambidexterity since they lack the financial and human resources that larger businesses must set up separate departments for exploratory and exploitation operations. Additionally, small, and medium-sized businesses face more difficulties in handling conflicts and tensions associated to exploratory and exploitative operations, which increases their demand for ambidexterity.

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