Uncertain Supply Chain Management 13 (2025) 525–536

Contents lists available at GrowingScience

Uncertain Supply Chain Management

homepage: www.GrowingScience.com/uscm

Does product innovation mediate the relationship between marketing innovation and innovative performance in manufacturing companies?

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A B S T R A C T

Innovation in the manufacturing industry is viewed as crucial due to its substantial effects on performance. This view has led researchers to evaluate the importance of different types of innovation within manufacturing companies. The influence of marketing innovation on product innovation and overall innovative performance is examined in the present study. The study also aims to explore the influence of product innovation on innovative performance and to analyze the mediating role of product innovation in the relationship between marketing innovation and innovative performance. Questionnaires were distributed to 384 managers from Palestinian manufacturing firms through convenience sampling. Structural equation modelling was employed as the data analysis tool. According to the study's findings, marketing innovation directly and positively impacts both product innovation and innovative performance, while product innovation positively influences innovative performance. Additionally, product innovation partially mediates the relationship between marketing innovation and innovative performance. This study is different from previous research as it focuses on the interrelationships between various dimensions of firms' innovation and performance. It adds to the literature on manufacturing performance by further validating the scales of innovation and performance. This approach could offer new insights into existing models of innovation and performance, crucial for success, by examining the interrelationships among organizational innovation dimensions, specifically marketing innovation, product innovation, and innovative performance, within the Palestinian manufacturing sector, which operates in a developing country facing conflict.

Article history:
Received January 9, 2024
Received in revised format April 20, 2024
Accepted August 24 2024
Available online
August 24 2024

Keywords:
Marketing innovation
Product innovation
Innovative performance

1. Introduction

The current business sector is highly competitive and complex (Kumbara & Afuan, 2021). In a competitive environment, business innovation is viewed as a crucial factor for survival and success in a continuously evolving market (Althuwaini & Abu-Alhaija, 2021). The introduction of a new or significantly improved product (good or service), process, marketing method, or organizational method signifies innovation(Sapaloglu & Bolatan, 2022). Innovativeness is a key element of growth strategies for entering new markets (Gunday et al., 2011; Sapaloglu & Bolatan, 2022). It is an important instrument in growth strategies for entering new markets and a crucial tool for reducing costs (Sapaloglu & Bolatan, 2022), increasing market share, and providing a competitive edge (Gunday et al., 2011). It also enhances product and service quality, as well as boosts productivity and profitability (Sapaloglu & Bolatan, 2022). Innovation is viewed as an important element for achieving customer satisfaction and meeting their needs (Reguia, 2014). Organizational innovations create a conducive environment for other types of innovation (Gunday et al., 2011). Globally, innovation has become a critical focus, particularly for countries and companies, as it drives sustainable development, social welfare, national competitive advantage, and improved quality of life (Sapaloglu & Bolatan, 2022). Innovation is vital for companies to handle the uncertainties of the external environment,

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ISSN 2291-6830 (Online) - ISSN 2291-6822 (Print)

doi: 10.5267/j.uscm.2024.8.015

especially in ever-changing markets, making it a key driver for businesses to succeed in the long run (Jiménez-Jiménez & Sanz-Valle, 2011). According to innovation literature, innovation is recognized as a crucial factor for firm success and achieving sustainable competitive advantage (Atalay et al., 2013). Due to the rapid technological and environmental changes, innovation has become a highly discussed topic today (Fatah & Amin, 2023). A culture of innovation effectively encourages marketing and product innovation (Aksoy, 2017). Firms can prioritize their market, product, and technology strategies by gaining a good understanding of the specific characteristics of innovations, which assist in the development of appropriate action plans(Gunday et al., 2011).

The literature review revealed that innovation is viewed as a multi-dimensional concept that comprises various aspects of business. Innovation extends beyond products and processes to include marketing and organizational aspects (Gunday et al., 2011). The findings indicated that four dimensions of innovation (product, process, organizational, and marketing) demonstrate a positively significant association with firm performance (Fatah & Amin, 2023). These dimensions represent critical business outcomes reflecting success and efficiency in competitive markets. Researchers have examined the innovation construct primarily from a technological perspective (Peng et al., 2021). Researchers and practitioners are interested in understanding the effects and implications of firm innovation's dimensions on a company's performance (Shanak & Abu-Alhaija, 2023). Thus, researchers are recommended to examine the significance and effects of marketing innovation (Aksoy, 2017; Fatah & Amin, 2023; Gunday et al., 2011; Peng et al., 2021; ul Hassan et al., 2013) and product innovation (Aksoy, 2017; Chang-Muñoz et al., 2023; Gunday et al., 2011). In addition, studying the impact of innovation variables and dimensions on firms' performance is deemed important for future research (Chang-Muñoz et al., 2023; Gunday et al., 2011; Sapaloglu & Bolatan, 2022; ul Hassan et al., 2013). Future researchers are recommended to examine the significance and determinants of innovation performance (Gunday et al., 2011; Sapaloglu & Bolatan, 2022; ul Hassan et al., 2013).

Innovation culture is crucial for sustaining both product and marketing innovation in small and medium-sized enterprises (SMEs), contributing to superior market performance (Aksoy, 2017). The relationships between several dimensions of innovation and firm performance were explored by several researchers (Gunday et al., 2011; ul Hassan et al., 2013). Notably, previous studies examined the construct of innovation mainly through a technical perspective. Nevertheless, the interrelationships between other dimensions of innovation, such as marketing and product innovation, were examined by very few empirical studies. The impact of marketing innovation on product innovation has not been adequately analysed, although there has been significant focus on marketing innovation in previous research (Aksoy, 2017; Gunday et al., 2011). Understanding the significance of marketing and product innovation would be appreciated due to their importance (Gunday et al., 2011; Joueid & Coenders, 2018). In addition, the mediating role of product innovation in the direct relationship between marketing innovation and innovative performance has been inadequately understood. Hence, further explanations and implications can be identified by assessing this relationship (Gunday et al., 2011; ul Hassan et al., 2013).

Prior research examined the direct relationships between marketing innovation, product innovation, and innovative performances from different research contexts, including Turkey (Gunday et al., 2011) and Pakistan (ul Hassan et al., 2013). Studying this topic from the perspectives of different sectors and contexts is highly advised as this effort may enhance the understating and significance of innovation variables and outcomes, as different contexts may lead to different results (Chang-Muñoz et al., 2023) due to national differences. To the best of the researcher's knowledge, prior studies have failed to address the interrelationships between the dimensions of innovations and innovative performance within Palestine's manufacturing industry. It is expected that the study's findings would benefit manufacturing companies in recognizing the significance of non-technical factors, such as marketing innovation and product innovation, in increasing the innovative performance of firms. The findings would also help Palestinian companies evaluate their innovation levels through marketing innovation and product innovation. Hence, this study attempts to examine (1) the influence of marketing innovation on both product innovation and innovative performance and (2) the mediating effect of product innovation on the association between marketing innovation and innovative performance. By exploring these relationships within the manufacturing sector, this research seeks to add knowledge to the existing literature by offering additional empirical insights into the relationship between innovation dimensions and innovative performance within a Palestinian sample. Exploring these relationships within the manufacturing sector is expected to contribute to the business literature by offering additional empirical evidence regarding the relationships between various dimensions of innovation and innovative performance within a Palestinian context. Furthermore, this study may potentially assist practitioners in understanding the influence of both marketing and product innovation on innovative performance.

This study seeks to determine whether marketing innovation or product innovation, as non-technical innovation factors, has a greater influence on the innovative performances of firms. By investigating how product innovation mediates the direct relationship between marketing innovation and innovative performance, this research focuses on expanding the existing body of literature with new empirical evidence. The researcher adopts the Resource-Based View (RBV) as a robust theoretical framework to elucidate the research assumptions. This paper comprises four sections. Section 1 offers the introduction, while

the literature review and hypotheses development are presented in Section 2. Subsequently, the research design and demographics are outlined in Section 3, whereas Section 4 offers the research findings, discussion, and conclusions.

2. Literature Review

2.1. Innovation

The precise definition of innovation does not have a universal agreement despite the abundance of definitions in the body of literature (Atalay et al., 2013; Jiménez-Jiménez & Sanz-Valle, 2011). The majority of definitions of innovation include the acceptance of a new concept or behavior (Chang-Muñoz et al., 2023; Jiménez-Jiménez & Sanz-Valle, 2011). The process of turning new knowledge or ideas into products, processes, or services that address evolving consumer needs is known as innovation (Chang-Muñoz et al., 2023; Reguia, 2014). This transformation involves learning, connecting with others, and investing resources (Chang-Muñoz et al., 2023). The goal of innovation is to create new ideas that provide companies with a competitive edge, particularly when they can offer their products at lower costs (Reguia, 2014). Innovation implies adopting new products, processes, and administrative changes (Jiménez-Jiménez & Sanz-Valle, 2011). A culture of innovation contributes to both marketing and product innovation (Aksoy, 2017). The term "innovation" covers four main types: product, process, organizational, and marketing innovation (Fatah & Amin, 2023; Gunday et al., 2011; Sapaloglu & Bolatan, 2022; ul Hassan et al., 2013). Additionally, new products, production processes, materials and resources, markets, and organizational forms are the five categories of innovation (Atalay et al., 2013). Both product and process innovations are categorized under technological innovation, while organizational and marketing innovations are part of non-technological innovation (Atalay et al., 2013). The impacts of marketing and product innovation on innovative performance are investigated in this study by emphasizing that innovation is a multi-dimensional concept that includes marketing, product, and process aspects.

Innovation is essential for all economies (Robertson et al., 2023) and is a key factor for success in businesses (Reguia, 2014). Scholars, policymakers, and business leaders agree that innovation drives economic growth, industrial change (Damanpour et al., 2009), and progress (Chang-Muñoz et al., 2023). The main motivation for firms to innovate is to enhance business performance (Gunday et al., 2011), improve products and processes (Atalay et al., 2013), and achieve and sustain a competitive advantage (Atalay et al., 2013; Damanpour et al., 2009; Fatah & Amin, 2023; Gunday et al., 2011; Jiang et al., 2023; Reguia, 2014; Sapaloglu & Bolatan, 2022).

Innovation is vital in today's competitive world to the extent that no company can sustain itself without fostering innovation processes (Chang-Muñoz et al., 2023). Innovation possesses significant commercial value as it has the potential to enhance companies' efficiency and profitability (Gunday et al., 2011). Innovation is becoming crucial for survival and growth amidst environmental uncertainties and rising competition in business (Kumbara & Afuan, 2021). Firms can prioritize their marketing, production, and technology strategies by gaining a good understanding of the specific nature of innovations, leading to effective subsequent action plans (Gunday et al., 2011).

The relationship between innovation and companies' performance is shown to be positive in the literature review (Aksoy, 2017; Chang-Muñoz et al., 2023; Gunday et al., 2011; Jiménez-Jiménez & Sanz-Valle, 2011; Kumbara & Afuan, 2021; Sapaloglu & Bolatan, 2022). Innovation reveals a business's financial strength, profitability, and long-term viability in relation to its rivals (Fatah & Amin, 2023). Organizations that adopt innovation acquire unique competencies and enhance their performance levels (Damanpour et al., 2009). Notably, firms and nations engaging in continuous innovation make great contributions to economic growth (Atalay et al., 2013). Companies possessing strong innovation capabilities are better equipped to adapt to their environment and gain new capacities (Kumbara & Afuan, 2021). Innovative firms may grow faster, become more efficient, and be more lucrative than their non-innovating counterparts (Fatah & Amin, 2023). This statement highlights the importance of companies instilling an innovation culture in their operations to achieve success in offering innovative products and services (Aksoy, 2017). Progress in innovation relies on research and development (R&D) endeavors (Sapaloglu & Bolatan, 2022). Organizational innovations have a significant and direct influence on innovative performance (Gunday et al., 2011). Investigating the process of developing innovation dimensions in small and medium enterprises (SMEs) is vital (Gunday et al., 2011). It is widely believed that comprehending the levels of innovations is vital for successful marketing and management (Akpoviroro & Amos, 2021). Product and marketing innovation strategies are vital factors in market performance (Gunday et al., 2011). For other forms of innovations, particularly process, product, and marketing, to succeed, organizational innovations assist in creating an appropriate internal environment (Gunday et al., 2011).

2.2. Marketing Innovation

Marketing innovation is a way to fulfil customer needs and create a lasting competitive edge by being different (Atalay et al., 2013; Gunday et al., 2011; Joueid & Coenders, 2018; Reguia, 2014). Marketing innovation is the introduction of a creative marketing plan that incorporates fundamental changes in product design, place, packaging, product promotion, and pricing strategy (Atalay et al., 2013; Fatah & Amin, 2023; ul Hassan et al., 2013). Marketing innovation involves the creation,

adoption, and implementation of novel marketing strategies, processes, or techniques that result in improved market performance, enhanced customer value, sustainable competitive advantage, increased brand equity, and improved customer satisfaction(Atalay et al., 2013; Gunday et al., 2011). Marketing mix innovation is another term for marketing innovation(Fatah & Amin, 2023). Marketing innovation strategy is regarded as an efficient approach in a dynamic environment (Chuwiruch et al., 2015). Previous studies have mainly focused on technology innovations, often simplifying marketing innovation to a single dimension. Most research on marketing innovation has been descriptive (Peng et al., 2021). This study identified marketing innovation as an important type of innovation construct in terms of innovative marketing techniques. A corporation may create its own marketing strategy or adopt one from another (Fatah & Amin, 2023), based on its situation and market considerations.

Marketing innovations are critical not only for an organization but also for its customers (Fatah & Amin, 2023) in terms of economic growth and health. Marketing innovations can help ensure a firm's sustainability and enable companies to address intense competition successfully (Peng et al., 2021). The present study's findings indicate that marketing innovation drives sales of products that are new to the firm and market (Joueid & Coenders, 2018). Market innovation is concerned with ascertaining how firms can effectively serve their target markets (Fatah & Amin, 2023). There is a common understanding that using effectives practices of marketing aims to satisfy target markets efficiently. (Abu-Alhaija et al., 2019; Althuwaini & Abu-Alhaija, 2021; Shanak & Abu-Alhaija, 2023).

This study uses empirical data from various industries in China to show that firm performance is significantly positively impacted by marketing innovation (Peng et al., 2021). The link between marketing innovation and business performance can vary based on how the company markets itself to existing and potential customers (Fatah & Amin, 2023). In order to enhance marketing innovation, companies should foster an innovative culture and stay updated with trends (Aksoy, 2017). The adoption of marketing innovations can enhance a firm's sustainability due to their importance (Peng et al., 2021). Companies must continuously understand market trends, consumer desires, and changes to remain competitive (Kumbara & Afuan, 2021). These examples illustrate the diverse and dynamic nature of marketing innovation in today's fast-paced business environment, which plays a critical role in driving organizational growth, competitive advantage, and long-term sustainability (Gunday et al., 2011). Therefore, managers must understand the significance of marketing innovation as a vital path to achieving business success.

2.1. *Product Innovation*

Examining the term in the field of product innovation reveals that meanings have changed over time (Reguia, 2014). Business and marketing researchers have defined product innovation according to their research focus and objectives. Product innovations can involve new technologies or knowledge, or they can arise from new applications or combinations of existing technologies or knowledge (Gunday et al., 2011; ul Hassan et al., 2013). Product innovation involves developing new products, modifying current product designs, or using new techniques and methods in existing production processes (Atalay et al., 2013; Fatah & Amin, 2023; Gunday et al., 2011; Kumbara & Afuan, 2021; Reguia, 2014; ul Hassan et al., 2013). Technological advancements are closely associated with product and process innovations (Gunday et al., 2011; ul Hassan et al., 2013). Product innovation involves substantial enhancements in technical specifications, components, materials, integrated software, user-friendliness, or other functional features, including replacing inputs with materials that have better properties (Atalay et al., 2013). The performance of product innovation is often assessed by the percentage of the product portfolio comprising (a) innovative products introduced to the market for the first time, (b) new products by the firm that already exist in the market, and (c) unchanged products (Joueid & Coenders, 2018).

Product innovation is a demanding process influenced by modern technologies, shorter product life cycles, advancing customer needs, and challenging global competition (Atalay et al., 2013; Gunday et al., 2011). Therefore, to remain competitive and sustain in the market, all firms, regardless of their size or sector, must innovate (Atalay et al., 2013). Firms should particularly focus on product innovations, as these are crucial for achieving sustainable competitive advantage (Kumbara & Afuan, 2021). Customers of innovative products benefit from more choices, better services, reduced prices, and enhanced productivity (Reguia, 2014). The major goal of product innovation is to meet market demand, which offers a key competitive advantage for companies (Vicky & Afuan, 2020). Additionally, product innovation helps reduce production costs and time, which could result in increased investment returns and production efficiency (Reguia, 2014).

Companies must determine whether they have the necessary human, financial, technological, and operational resources to develop new products. Companies must increasingly evaluate all options to achieve this strategy (Chang-Muñoz et al., 2023). Previous discussions highlight the significance of product innovation as an essential path to company success. Therefore, product innovation must be carefully planned and executed (Kumbara & Afuan, 2021).

The literature review indicates that product innovation has the potential to improve various business and marketing aspects. It drives economic growth and productivity (Reguia, 2014) and has a significant positive impact on competitive advantage

(Kumbara & Afuan, 2021). Product innovation is closely linked to firm performance (Atalay et al., 2013; Chang-Muñoz et al., 2023; Fatah & Amin, 2023). Findings imply that market performance has a significant positive relationship with product innovation (Aksoy, 2017) and a direct positive effect on environmental sustainability in developing SME performance (Chang-Muñoz et al., 2023). Various external and internal factors influence product innovation, such as customer needs and expectations (Reguia, 2014). Product innovation is positively impacted by customer orientation and inter-functional coordination (Aydin, 2021). Research shows a significant relationship between product innovativeness and market orientation (Akpoviroro & Amos, 2021; Verhees & Meulenberg, 2004). Product innovation is also affected by the market knowledge dimensions (De Luca & Atuahene-Gima, 2007). To succeed in product innovations, firms should establish mechanisms to gather information about customer needs and expectations (Aydin, 2021).

2.1. *Innovative Performance*

Innovative performance is defined as the transformation of innovation inputs or resources into implemented innovative outputs, contributing to success in the market and economic growth (Robertson et al., 2023). It includes renewing the administrative system, introducing innovations in work processes and methods, and increasing the quality and number of new products and services launched (Gunday et al., 2011). Innovative performance encompasses all achievements and results that emerge from innovation (Robertson et al., 2023). The technical aspects of innovation and introducing new products to the market are focused on innovative performance (Hagedoorn & Cloodt, 2003).

Innovative performance combines an organization's overall achievements emerging from renewal and improvement endeavors in diverse aspects of firm innovativeness, such as processes, products, and organizational structure (Gunday et al., 2011). An indicator of innovative performance is new product announcements (Hagedoorn & Cloodt, 2003). Innovative performance encompasses all factors involved in developing and diffusing innovations, leading to better firm performance (Robertson et al., 2023).

Innovative performance has been a prevalently discussed topic in contemporary business fields due to its link with economic growth (Robertson et al., 2023). Innovative performance is viewed as a crucial success factor for all businesses. Innovative performance is the key outcome of innovation (Robertson et al., 2023). It has been documented as a tool to achieve critical competitive advantage for firms in developing economies (Kaya et al., 2020). Employees' innovative performance is crucial for an organization to achieve long-term sustainability and competitive advantages, especially in the technology sector(Chang et al., 2023). Innovative firms tend to have higher market share, total sales, and exports (Gunday et al., 2011; ul Hassan et al., 2013). Measuring companies' innovative performance is vital for increasing firm value and improving decision-making processes (Ponta et al., 2021). According to Gunday et al. (2011), innovative performance comprises the quantitative measures of firm performance. By using indicators such as R&D inputs, patent counts, patent citations, and new product announcements, innovative performance could be examined in a stricter sense. In order to measure innovative performance more broadly, these indicators can be utilized individually or combined in a multi-dimensional approach (Hagedoorn & Cloodt, 2003). In this framework, innovative performance is crucial as it functions as a central hub. The positive effects of various types of innovation are assembled and subsequently transferred to production, market, and financial performances (Gunday et al., 2011). Innovative solutions improve production processes by improving quality, value, and speed and reducing costs (Gunday et al., 2011; ul Hassan et al., 2013).

The study's findings revealed that innovative performance is influenced by various factors and is context-dependent, leading to diverse outcomes in innovation (Robertson et al., 2023). Innovative performance can positively affect firms' production, market, and financial performances (Gunday et al., 2011; ul Hassan et al., 2013). Observation indicates that innovative performance positively impacts operational performance across different sectors (Sapaloglu & Bolatan, 2022). Additionally, innovative performances indirectly contribute to financial performance through their positive impact on market performance (Gunday et al., 2011). Furthermore, knowledge absorption emerges as the strongest predictor of innovative performance (Robertson et al., 2023). The perceived value of big data management significantly influences librarians' innovative performance (Zotoo et al., 2021). Collaboration for innovation, organizational learning, and inter-organizational communication is essential for contributing to higher levels of innovative performance (Kaya et al., 2020). Both R&D personnel and capital agglomeration positively impact the innovative performance of Chinese firms (Ye et al., 2022). The results indicated that individual motivation positively influences innovative performance (Jiang et al., 2023). The reallocation of government grants also enhances innovative performance (Zhang & Wang, 2023). Moreover, organizational and marketing innovations directly affect innovative performance, with additional indirect effects through product innovation (Gunday et al., 2011). The findings further revealed that employees' informational conforming behaviors enhance their innovative performance through the mediating roles of instrumental and expressive ties (Chang et al., 2023). Process innovation has a significant correlation with innovative performance and influences it through its impact on product innovation (Gunday et al., 2011).

3. Hypotheses Development

3.1. Marketing Innovation and Product Innovation

Customer needs are addressed through marketing innovations, which create opportunities for newer product innovations (Gunday et al., 2011). Marketing innovation involves introducing existing products to the market through another firm and creating products that are novel to the firm's market (Aksoy, 2017; Joueid & Coenders, 2018). For SME managers, marketing innovation is crucial for achieving superior market performance and creating new and unique products (Aksoy, 2017).

Marketing innovation must assess consumer value perceptions and identify unmet customer demands, which could assist organizations in developing new innovative products (Fatah & Amin, 2023). Some studies discovered that marketing innovations can complement technological innovations and make product innovations more successful (Aksoy, 2017). The research findings highlight that product innovation has a positive direct relationship with marketing innovation (Aksoy, 2017; Fatah & Amin, 2023; Gunday et al., 2011). Most practitioners and academics concur that product innovation is driven by the market and involves notable changes to a tangible component of the product or service (Fatah & Amin, 2023). Marketing innovation can enhance product or service innovation (Purchase & Volery, 2020). Understanding marketing innovation can improve product innovation and the market performance of SMEs (Aksoy, 2017). These studies indicate a significant relationship between marketing innovation and product innovation, which are vital for an organization's success. Therefore, the following hypothesis has been posited:

H_1: *The higher the level of marketing innovation, the higher the level of product innovation.*

3.2. Marketing Innovation and Innovative Performance

The adoption of various types of innovation over time assists in developing organizational capabilities and impacts organizational behavior and outcomes (Damanpour et al., 2009). It has been stated that all types of innovations positively affect a firm's innovative performance (Gunday et al., 2011; ul Hassan et al., 2013). According to Afriyie et al., (2019), innovation affects marketing performance. Market-based innovation affects innovation performance (He et al., 2021). Marketing innovation is deemed as a specific type of innovation construct and directly positively affects innovative performance (Fatah & Amin, 2023; Gunday et al., 2011; Joueid & Coenders, 2018). Innovation performance is also predicted by marketing innovation (Fatah & Amin, 2023; Joueid & Coenders, 2018). On the whole, these studies imply that a positive relationship exists between marketing innovation and innovation performance, which are vital for a company to succeed. Thus, the following hypothesis is suggested:

H_2: *The higher the level of marketing innovation, the higher the level of innovative performance.*

3.3. Product Innovation and Innovative Performance

Adopting different types of innovations over time helps build organizational skills and influences how organisations behave and perform (Damanpour et al., 2009). The study showed that four types of innovation, comprising product, process, organizational, and marketing, had a significant and positive impact on a company's performance (Fatah & Amin, 2023). It has been suggested that all types of innovations positively impact a firm's innovative performance (Gunday et al., 2011; Shanak & Abu-Alhaija, 2023; ul Hassan et al., 2013). Product innovation is viewed as a key type of innovation. It is a crucial driver for innovative performance (Gunday et al., 2011; ul Hassan et al., 2013). Specifically, product innovations have a direct and positive effect on innovative performance (Gunday et al., 2011). These studies imply the existence of a positive relationship between product innovation and innovative performance, which are important for an organization's success. Thus, the following hypothesis is posited:

H_3: *The higher the level of product innovation, the higher the level of innovative performance.*

3.4. Mediation Role of Product Innovation

Literature review shows that marketing innovation has a direct positive relationship with product innovation (Aksoy, 2017; Fatah & Amin, 2023; Gunday et al., 2011; ul Hassan et al., 2013). In addition, marketing innovation directly and positively affects innovative performance (Fatah & Amin, 2023; Gunday et al., 2011; Joueid & Coenders, 2018). Product innovation mediates the relationship between external information and marketing innovation. (Ramirez et al., 2018). All types of innovations positively impact a firm's innovative performance (Gunday et al., 2011). Additionally, product innovations directly and positively influence innovative performance (Gunday et al., 2011; ul Hassan et al., 2013). Marketing innovations have been found to affect innovative performance both directly and indirectly through product innovation (Gunday et al.,

2011). Hence, product innovation mediates the relationship between marketing innovation and innovative performance. The hypothesis suggested below is developed according to the discussion above.

H_4: *Product innovation mediates the relationship between marketing innovation and innovative performance.*

4. Research Design and Method

4.1. *Sample*

As per the research reviews, this paper investigates three research questions:

(1) The impact of marketing innovation on product innovation and innovative performance
(2) The impact of product innovation on innovative performance
(3) The mediating role of product innovation in the relationship between marketing innovation and innovative performance

Data was collected in the fall of 2023 from three cities in Palestine: Jenin (35%), Ramallah (41%), and Hebron (24%) to address these research questions. A research questionnaire developed based on a review of the literature was used as the data collection tool (Gunday et al., 2011; Shanak & Abu-Alhaija, 2023). By using convenience sampling, 384 managers were selected as the study's participants. According to the suggestions in the literature, the sample size is considered adequate. With a response rate of 60.67%, a total of 233 questionnaires were usable for analysis. The selected managers have excellent knowledge regarding their business. They include general managers (29.18%), production managers (20.17%), marketing managers (24.89%), and financial managers (25.75%). The study's sample included manufacturing companies from vital sectors: medical (4.72%), chemical (17.16%), clothing (11.58%), food (27.46%), dairy (13.73%), and building materials (20.6%). According to the survey's findings, most respondents work in small and medium-sized companies (94.84%). Additional demographic details, such as their business location, their position in the company, the related industry, and the number of employees in the company, were also asked in the survey. The respondents' demographics are available in Table 1.

Table 1
Respondents' Demographics Background

Variable	Categories	Frequency	Percentage (%)
Position	General manager	68	29.18
	Financial manager	60	25.75
	Marketing manager	58	24.89
	Production manager	47	20.17
	Total	233	100
Employee	Below 50	158	67.8
	Between 51-250	63	27.03
	Above 250	12	5.15
	Total	233	100
Industry	Medicine	11	4.72
	Chemical	40	17.16
	Clothes	27	11.58
	Food	64	27.46
	Dairy	32	13.73
	Building material	48	20.6
	Others	11	4.72
	Total	233	100

4.2. *Measurement of Variables*

This paper aims to investigate the mediating role of product innovation in the relationship between marketing innovation and innovative performance. The questionnaire of this research comprises 15 questions designed to assess organizational innovation in two dimensions: marketing innovation and product innovation. Organizational performance is evaluated in terms of innovative performance. In this study, all measurement items are adopted from previously validated instruments. The scales for marketing innovation (four items), product innovation (four items), and innovative performance (seven items) are adopted from Gunday et al. (2011). By utilizing a five-point Likert scale ranging from 1 (“extremely unsuccessful”) to 5 (“extremely successful”), the respondents assessed their organization's performance and innovation. In order to assess the direct and indirect influences, data was analyzed utilizing structural equation modelling (SEM) with Smart PLS. Incomplete questionnaires with numerous missing responses were excluded from the study.

5. Analysis and Findings

In order to examine measurement consistency, this study tests both reliability and composite reliability. The Cronbach's alpha values for marketing innovation, product innovation, and innovative performance are 0.736, 0.770, and 0.831, respectively (Refer to Table 2). Additionally, the present study found that the composite reliability values range from 0.738 to 0.848. The reliability values and composite reliability are higher than 0.6. Hence, the study's measurements are found to be reliable. Discriminant validity was assessed utilizing the Fornell-Larcker criterion and cross-loading. The study's measurement model has attained convergent and discriminant validity through acceptable levels of average variance extracted (AVE), factor loadings, reliability, and composite reliability (Refer to Tables 2 and 3). In particular, goodness of fit (GOF) was used to validate the PLS model's performance, taking into account the structural and measurement models (Chin, 2010). Ramayah et al. (2016) asserted that a model is deemed to be well-fitting if the GOF value is less than 0.10 or 0.08. As per the standardized root-mean-square error (SRMR) value of 0.094, the model is considered to be a good fit.

Table 2
Organizational Performance Statistics

Construct	Items	Loadings	Cronbach α	CR	AVE
IP	IP1	0.804	0.831	0.848	0.542
	IP2	0.745			
	IP3	0.755			
	IP5	0.794			
	IP6	0.645			
	IP7	0.658			
MI	MI1	0.792	0.736	0.738	0.559
	MI2	0.771			
	MI3	0.736			
	MI5	0.687			
PDI	PDI	0.828	0.770	0.778	0.594
	PD2	0.783			
	PD3	0.790			
	PD4	0.673			

Note: This table displays organizational performance statistics.

Table 3
Discriminant Validity Using Fornell-Larcker Criterion of the Research Model

Constructs	IP	MI	PDI
IP	.736		
MI	.699	.748	
PDI	.598	.666	.771

Note: This e shows the discriminant validity of the study variables using Fornell-Larcker.

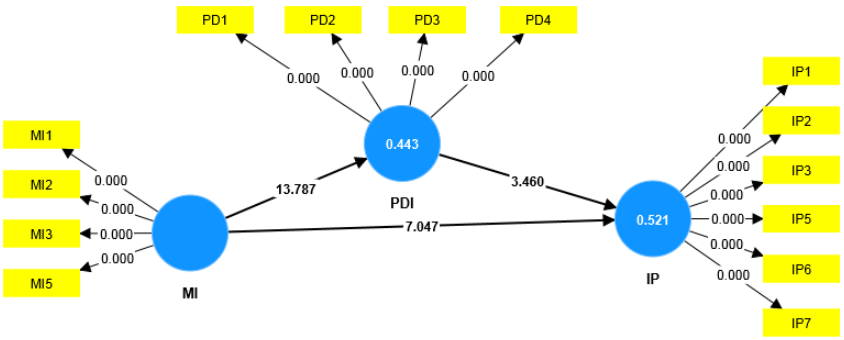

Fig. 1. Measurement model

By using Smart PLS, the SEM structured model examines the effects of marketing innovation on product innovation and innovative performance, as shown in Figure 1. Thus, all the suggested hypotheses are supported. As shown in Table 4, marketing innovation positively impacts product innovation (b = 0.666, t-value = 13.787, p-value = 0.000 < 0.05) and innovative performance (b = 0.541, t-value = 7.047, p = 0.000 < 0.05). Therefore, H1 and H2 are supported. Table 4 also indicates the positive and significant impact of product innovation on innovative performance (b = 0.238, t-value = 3.460, p = 0.000 < 0.05). Additional analysis revealed that the indirect effect of marketing innovation on innovative performance through product innovation was also significant and positive (b = 0.158, t-value = 3.374, p = 0.001 < 0.05), indicating partial mediation. Additionally, Table 5 shows an R2 value of .521 for innovative performance, which was predicted through marketing and product innovation. Similarly, the R2 value for product innovation, which was predicted by marketing innovation, is .443. Finally, the results reveal that the R2 values for both product innovation and innovative performance were

significant (Mitchell et al., 2012) . Additionally, Table 6 illustrates the f^2, ranging from 0.066 to 0.796, which clarifies the effect sizes between the independent and dependent variables. Hence, as the values exceed the recommendation of Hair et al. (2016), the finding suggests that the effect sizes vary from small to large.

Table 4
Empirical Results of Hypotheses Testing

Hypotheses	Path coefficient	T- value	P-values	Results
MI→IP	0.541	7.047	0.000	Supported
MI→PDI	0.666	13.787	0.000	Supported
PDI →IP	0.238	3.460	0.000	Supported
MI → PDI → PI	0.158	3.374	0.001	Supported

Significant at $p < 0.01$
Note ***Statistically significant at 0.01 level.

Table 5
Empirical Results of the R2 Square Values and Predictive Relevance Q2 Assessment

Construct	R2	Result	Predictive relevance Q2
IP	.521	Substantial	0.261
PDI	.443	Substantial	0.254
MI	---	---	0.000

Note: This table shows the results of the R square and predictive relevance Q2.

Table 6
Empirical Findings of the Size Effect

Path	f^2	Size effect
MI → IP	0.340	Large
MI → PDI	0.796	Large
PDI → IP	0.066	Small

Note: This table presents the results of the size effect. *f^2 values from 0.02 to 0.15 is a small effect, from 0.15 to 0.35 is a medium effect, and exceeding 0.35 indicates large effects* (Hair et al., 2016)

6. Discussion

In Palestine, the manufacturing industry is recognized as one of the most crucial sectors. Hence, the researchers were encouraged to explore the connections between organizational innovation dimensions and manufacturing companies' innovative performance. The findings are anticipated to assist companies succeed in this sector. The study's findings showed that all hypotheses were supported. The present study also discovered that marketing innovation positively influences product innovation. This finding suggests that product innovation can be improved through effective marketing innovation. This finding aligns with previous studies, which also identified a significant relationship between marketing innovation and product innovation (Aksoy, 2017; Fatah & Amin, 2023; Gunday et al., 2011). These researchers asserted that higher product innovation emerges from higher marketing innovation. The study's findings confirm Gunday's et al. (2011) argument that marketing innovation creates possibilities for further product innovations. The study's findings also corroborate Gunday's et al. (2011) argument that marketing innovation in terms of renewing the product promotion techniques, distribution channels, product pricing techniques, current and new product designs, and renewing general marketing management activities primarily depends on product innovation. Several studies, such as Aksoy's (2017), discovered that marketing innovations can complement technological innovations and make product innovations more successful. This finding aligns with the present study's findings, highlighting the importance of improvements in marketing innovation as a success predictor in product innovation. This means that practices of marketing innovation such as effective tactics of pricing, promotion, distribution, and product can enhance product innovation, positively.

Moreover, the present study revealed that marketing innovation positively influences innovative performance, indicating that improving marketing innovation can boost innovative performance. This finding corroborates previous studies, which also showed a notable relationship between marketing innovation and innovative performance (Fatah & Amin, 2023; Gunday et al., 2011; Joueid & Coenders, 2018; ul Hassan et al., 2013). The researchers highlighted that greater marketing innovation results in higher innovative performance. The study's findings offer empirical evidence which supports Gunday et al. (2011), who argued that all types of innovations positively affect the innovative performance of a firm. Elements of marketing innovation, such as renewing general marketing management activities, motivate innovative performance (Gunday et al., 2011). The present study's findings confirm the argument of previous researchers that marketing innovation predicts innovation performance (Fatah & Amin, 2023; Joueid & Coenders, 2018). This means that practices of marketing innovation such as effective tactics of pricing, promotion, distribution, and product can enhance positively innovative performance.

The findings reveal that product innovation positively influences innovative performance, suggesting that innovative performance can be improved through product innovation. These findings corroborate previous studies, proving that product innovation is positively related to innovative performance (Gunday et al., 2011). The findings corroborate previous researchers' findings that product innovation is a crucial driver of innovative performance (Gunday et al., 2011; ul Hassan et al., 2013). This means that effective innovation in products and services management can enhance positively innovative performance of industrial companies in Palestine. According to the study, marketing innovation explained a larger proportion of innovative performance (54%) compared to product innovation (24%) (Refer to Table 4). As per the findings, product innovation can potentially partially mediate the relationship between marketing innovation and innovative performance. Hence, companies rely on marketing innovation both directly and indirectly to determine their innovative performance. The present study's findings also align with previous research by implying the mediating role of product innovation between innovative performance and marketing innovation (Gunday et al., 2011). While the mediating role of product innovation is only partial, it is considered a crucial aspect of innovation that significantly influences the relationship between innovative performance and marketing innovation. The findings corroborate with those of Gunday et al. (2011), who stressed that marketing innovations through product innovation have direct and indirect effects on innovative performance. This means that adopting effective practices of marketing innovations is considered vital to enhance industrial companies' innovative performance.

7. Conclusions and Implications

The present study also examined firms' innovation and performance specifically by examining the relationships between dimensions of innovation and innovative performance (e.g., Gunday et al., 2011; ul Hassan et al., 2013). A conceptual framework is provided in this study to understand how marketing innovation and product innovation, as important dimensions of innovation, influence innovative performances as a specific dimension of performance. From an Arab perspective in the context of the manufacturing sector of Palestine, a developing country under occupation, the study's findings add to the literature on manufacturing innovation and performance by validating the innovation and performance scales. This study is the first to assess these assumed relationships. The study includes various sectors in Palestine, including medicine, chemicals, clothing, food, dairy, and building materials, to ensure valid, reliable results and conclusions.

The study yielded several findings. The study's findings suggest that decision-makers in manufacturing companies should take into account the factors of marketing innovation and product innovation as important dimensions of innovation that can enhance organizational performance through innovative performance. Due to its explicit role in enhancing product innovation and innovative performances, companies should specifically focus on marketing innovation. Thus, managing elements of marketing innovation by renewing product promotion techniques, distribution channels, pricing strategies, current and new product designs, and overall marketing management activities. Through improved product innovation and innovative performance, this approach can help in achieving a competitive advantage in the Palestinian market. Additionally, companies must prioritize product innovation due to its crucial role in improving innovative performance. Essentially, managers should recognize marketing innovation and product innovation as success factors for improving innovative performance concerning quality and innovative products and procedures.

Product innovation relies on marketing innovation. Therefore, decision-makers must concentrate on marketing innovation to improve product innovation when developing new products, developing newness, decreasing manufacturing costs, and increasing manufacturing quality. Furthermore, the study's findings suggest that innovative performance is dependent on marketing innovation and product innovation. It is foreseeable that marketing innovation would affect product innovation, which, in turn, would positively affect innovative performance. Thus, to achieve success in the manufacturing sector, manufacturing companies' managers must integrate firm innovation dimensions into their strategies and plans. Hence, managers should acknowledge the importance of marketing innovation, product innovation, and innovative performance in achieving their objectives. Thus, companies must continually analyze and examine these characteristics to improve their performance in today's competitive market.

This study has a number of limitations. Firstly, it would be beneficial to replicate the study by gathering data from additional regions to enhance the study's external validity. Additionally, conducting a comparative study by including samples from different countries such as the Kingdom of Saudi Arabia (KSA), Jordan, and Palestine would be valuable. Secondly, the generalizability of the findings is limited due to the use of convenience sampling. Notably, Palestine is a country facing conflict, a situation which might potentially affect the study's findings. Researchers could further validate the current findings by exploring other manufacturing sectors such as automobile, office furniture, home furniture, and electronics businesses. Additionally, investigating the impacts of various business factors on innovation and performance dimensions would be beneficial. Exploring the interrelationships between organizational innovation and performance dimensions in KSA could be an important future research area, as the country has strong economic growth.

Acknowledgement

The author would like to thank the Arab Open University for supporting this research.

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