



**Research Publishing
Academy (RPA)**
London, United Kingdom (UK)

JIBM

Journal of International Business and Management (JIBM)
Journal Homepage: <https://rpajournals.com/jibm>

The Impacts of Environmental Orientation, Social Media, Innovation Capabilities, and Marketing Management on Innovation Performance of Manufacturing SMEs in Bangladesh: A Mediated Moderation Model

Md Awlad Hossain^{1,2*}

Huam Hon Tat³

Azmawani Abd Rahman¹

Putra Business School, Universiti Putra Malaysia, Selangor, Malaysia¹

Department of Marketing, Comilla University, Cumilla, Bangladesh²

Faculty of Business, City University of Macau, Taipa, China³

Abstract

This empirical study investigates the impact of environmental orientation (EO) and social media (SM) adoption on the innovation performance (IP) of manufacturing SMEs in Bangladesh. The study also examines the mediating role of innovation capabilities (IC) in these relationships, as well as the moderating effect of marketing management (MM) on the association between EO, SM, and IP. Using a stratified random sampling technique, data were collected from 369 managers of textile manufacturing SMEs—including weaving, spinning, and dyeing firms. Structural Equation Modeling (SEM) was employed via SmartPLS 4.0 for data analysis. The findings indicate that both EO and SM have a significant direct effect on innovation performance. Furthermore, IC was found to positively mediate the relationships between EO–IP and SM–IP. Additionally, marketing management was shown to moderate and strengthen the direct effects of EO and SM on innovation performance. While the empirical evidence supports the critical roles of EO and SM in enhancing innovation, existing literature lacks sufficient discussion on the integrated role of EO, SM, IC, and MM in driving innovation performance, particularly within the context of manufacturing SMEs in Bangladesh. The results suggest that organizations should prioritize environmental concerns, social media adoption, and strategic marketing management to foster innovation. However, as data were exclusively collected from the manufacturing sector, the findings may not be generalizable to all industry contexts.

Keywords: Environmental orientation, Social media, Innovation capabilities, Marketing management, Innovation performance

Corresponding Author*

DOI: <https://doi.org/10.37227/JIBM-2025-05-7142>

Introduction

The contemporary business environment is marked by intense competition, rapid technological advancements, and increasing market volatility (Mahlich & Pascha, 2007; Ujam, 2025). As a result, organizations are increasingly focusing on innovation to ensure sustainability and gain a competitive advantage. Innovation is widely regarded as a key driver of business growth, as it enables firms to enhance operational efficiency, improve process technologies, increase productivity, and reduce waste (Sutrisno et al., 2023; Yun et

al., 2024). The Global Innovation Index (GII), which evaluates the innovation performance of 132 economies, highlights a strong correlation between innovation and economic growth (Dutta et al., 2022). In the 2022 GII, Bangladesh was ranked 102nd out of 132 countries, indicating a relatively poor innovation performance. Particularly low scores in environmental issues and ICT services have hindered Bangladesh's innovation advancement (GII, 2022).

Research suggests that firms integrating environmental goals into their strategic frameworks often emerge as leaders in innovation (Kim et al., 2022). Beyond regulatory and societal pressure, environmental orientation (EO) has been shown to positively influence long-term firm performance by improving customer acquisition and retention (Gadenne et al., 2009; Leonidou et al., 2010). Moreover, EO may lead to cost reductions, increased customer demand, lower risks, and improved employee retention (Baquero, 2025; Gemici & Zehir, 2023). This context warrants deeper investigation into how EO affects the innovation performance of manufacturing firms in developing countries such as Bangladesh.

Additionally, environmental consciousness often drives firms to adopt new technologies, such as social media (SM), to maintain competitiveness and sustainability (Elliot, 2011; Nidumolu et al., 2009; Yun et al., 2019). SMEs, in particular, must leverage SM platforms not only for marketing but also to enhance innovation performance (Puriwat & Tripopsakul, 2021; Qalati et al., 2021; Tajudeen et al., 2018). These platforms offer cost-effective communication tools that enhance visibility, customer engagement, and collaboration with partners and stakeholders ((Qalati et al., 2021; Tajudeen et al., 2018; Yun & Mohan, 2012). Despite this potential, the relationship between SM adoption and innovation performance in SMEs—especially in developing economies—remains underexplored (Ainin et al., 2015; Parveen et al., 2015).

While the role of EO and SM adoption in enhancing innovation has gained traction in marketing, management, and innovation literature, there is limited empirical evidence on the factors that moderate these relationships. A significant research gap exists regarding how SMEs' internal resources and competencies influence the link between strategic orientation and innovation performance. In this context, marketing management (MM) and innovation capabilities (IC) are increasingly recognized as critical enablers of SME innovation and performance (Fan et al., 2021; Fang et al., 2022). Scholars have emphasized the need to explore the mediating role of IC (Alegre & Chiva, 2013; Ferreira et al., 2020) and the moderating role of MM in the relationship between EO, SM, and innovation outcomes. This study investigates the mediating role of innovation capabilities and the moderating role of marketing management in the relationship between environmental orientation, social media adoption, and innovation performance of manufacturing SMEs in Bangladesh.

The study contributes to the academic literature in several ways. First, there is limited empirical evidence on social media adoption and innovation performance in SMEs, particularly in developing countries (Meske & Stieglitz, 2013). Second, although prior studies have explored causal links among EO, SM, and innovation (Qalati et al., 2021), theoretical exploration incorporating the resource-based view (RBV) remains scarce (Venciūtė, 2018). Third, the mediating role of IC in innovation-performance relationships is underexamined and warrants further exploration (Qalati et al., 2021). Finally, this study addresses the under-researched moderating role of marketing management in shaping the relationships between EO, SM, and innovation performance in manufacturing SMEs.

The structure of the paper is as follows: Section 2 reviews the literature on environmental orientation, social media, innovation capabilities, marketing management, and innovation performance. Section 3 outlines the research methodology and measurement instruments.

Section 4 presents the data analysis and results. Section 5 discusses the study's theoretical and practical implications, research limitations, and avenues for future research.

Literature Review

Environmental Orientation and Innovation Performance

According to the Resource-Based View (RBV) perspective, study assert that small and medium-sized enterprises (SMEs) that embrace an environmental orientation are more likely to obtain valuable, rare, inimitable, and non-substitutable new resources (Grant, 1991; Helfat et al., 2023; Jafari & Rezaee, 2014; Lukovszki et al., 2021; Wernerfelt, 1984), thereby enhancing their capacity to produce product and process innovations. This is particularly applicable when enterprises, especially SMEs, focus on the advancement of environmental technologies or 'eco-innovations.' In this context, SMEs possess the benefit of an optimized, adaptable structure, characterized by a reduced number of hierarchical levels (Jansson et al., 2017). This indicates that when managers choose for an environmental orientation approach, it becomes more feasible to include environmentalism into the organization's culture and climate (Roxas et al., 2017). Consequently, since environmental orientation is more readily conveyed across functions in SMEs (Dibrell et al., 2015), such changes foster the development of a more robust identity for the business.

Small and medium-sized enterprises (SMEs) enhance their capacity to choose the most effective resource combinations for innovation (Leonidou et al., 2016), therefore mitigating the considerable uncertainty and substantial transformations often associated with companies that adopt environmentally sustainable practices (De Marchi, 2012). Consequently, SMEs may cultivate an eco-friendly reputation, both domestically and internationally, hence gaining credibility among stakeholders (Danso et al., 2019). This reputational aspect may initiate a beneficial innovation loop, encouraging the pursuit of new knowledge, relational, and intangible resources (e.g., a firm's eco-friendly image), hence enhancing the probability of implementing product and/or process innovations in SMEs. Accordingly, we assert that:

H1. Environmental orientation positively influences the innovation performance of SMEs.

Social media adoption and innovation performance

A globally agreed-upon definition of social media (SM) remains unclear despite several efforts to establish one. This research has defined SM across several settings, including marketing, social, technological, and communication. SM denotes 'collaborative online applications and technologies that facilitate participation, connectedness, user-generated content, information exchange, and collaboration among a community of users' (Henderson & Bowley, 2010).

Several other academics have noted the significance of SM adoption in SME success, but the context of innovative performance has received relatively less attention. Ainin et al. (2015) showed that Facebook use positively influences both the financial and non-financial performance of enterprises. Tajudeen et al. (2018) demonstrated that enhanced social media improves small and medium-sized enterprises via better marketing activities (such as product and service advertising, promotions, etc.) and customer interactions. Qalati et al. (2021) has noted that the implementation of social media favorably impacts the performance of small and medium-sized enterprises by enhancing exposure, interaction, reputation, customer service, and connections. Abu Bakar et al. (2019) identified a negligible correlation between the usage of social media and company success in UAE SMEs. Although several firms are exploring social media strategies for innovation, a significant proportion of these trials fail

or are inadequately structured to optimize social media integration(Jussila et al., 2011).Consequently, this research proposes the following hypothesis to investigate the novel causation between variables.

H2: Social media adoption positively impacts the innovation performance of small and medium-sized enterprises in developing nations.

Environmental Orientation and Innovation Capabilities

Environmental orientation and innovation Capabilities are becoming more interlinked as firms encounter demands to achieve sustainability while preserving competitive advantage(Mady et al., 2023; Tseng et al., 2019). Environmental orientation is an organization's strategic approach to incorporating environmental factors into its operations, often influenced by governmental, societal, or commercial forces(Yasir et al., 2020). This perspective cultivates a culture that prioritizes sustainability and may stimulate innovation by promoting the advancement of green technology, environmentally friendly goods, and sustainable practices. Innovation Capabilities, which include the capacity to originate, adapt, and execute new ideas, are crucial for converting environmental focus into concrete results(Lichtenthaler & Lichtenthaler, 2009). Research indicates that companies with a strong environmental focus and substantial innovation Capabilities are more adept at seizing opportunities in green markets, increasing operational efficiency, and enhancing stakeholder relations. This combination enhances environmental performance while simultaneously fostering long-term profitability and resilience in changing commercial contexts(Ortiz-de-Mandojana & Bansal, 2016; Wu & Tham, 2023).

Small and medium-sized enterprises with a strong environmental focus are more inclined to incorporate ecological factors into their strategic goals, prompting innovation in goods, processes, and business models (Carfora et al., 2021). This alignment promotes investment in environmentally friendly technology and the implementation of sustainable practices, which may improve operational efficiency and save costs. Furthermore, environmental orientation may act as a motivation for innovation, encouraging SMEs to pursue innovative solutions to environmental issues, like waste reduction and energy efficiency(Rodríguez-Espíndola et al., 2022). Research indicates that SMEs with a strong environmental emphasis have more adaptability and resilience, using their innovative capacities to address changing market needs and regulatory challenges. Thus, this synergy enhances both environmental and economic performance while fortifying the competitive stance of SMEs in markets that are more attuned to sustainability.

H3: There is a positive relationship between environmental orientation and innovation capabilities.

Social media adoption and innovation capabilities

Though social media adoption (SMA) and innovation capabilities (IC) studies are very limited and rare, some studies demonstrated that the use of social media directly impacts the innovative capacities of small and medium-sized enterprises (SMEs). SMA promotes information dissemination, hence generating chances for innovation and reducing time to market (Borah et al., 2022). Research-based on the resource-based view (RBV) indicates that the use of social media improves the innovation capacity of SMEs, hence favorably influencing their performance (Fang et al., 2022). Innovation capabilities often act as a mediator in the link between social media use and SME performance(Fang et al., 2022). Various studies indicate that the usage of social media by SMEs substantially improves their innovative capability(Borah et al., 2022; Fan et al., 2021; Le & Chakrabarti, 2023).

The importance of social media (SM) as a catalyst for improving innovation capacities within businesses has been emphasized increasingly in research. Ioanid et al.

(2018) contend that by facilitating interaction with a diverse range of stakeholders, including as customers, partners, suppliers, academics, and communities, SM adoption fosters the growth of innovative capacities. Ram and Liu (2018) go on to explain how SM speeds up the innovation process by enabling user participation in crucial phases of product creation, including planning, testing, and development. According to the dynamic capability perspective, SM helps businesses to use collective intelligence, which promotes lean management techniques and agility. Bertschek and Kesler (2022) and Hitchen et al. (2017) highlight SM's strategic role in integrating internal and external knowledge resources to increase innovation potential, lower costs, and save time. Through interactive tactics and user involvement in sales and market research, SM also improves marketing innovation, hence strengthening businesses' capacity for innovation. According to the above discussions, the correlation between SM and IC might be posited as follows:

H4: There is a positive relationship between social media Adoption and innovation capabilities.

Innovation capabilities and innovation performance

Though there are several studies stating IC and firm performance, very few studies have evidenced the relationship between IC and Innovation performance in the current literature. Utilizing the dynamic capabilities framework, innovation capability has emerged as a study focus based on its ability to convert knowledge into products, processes, and systems, particularly within small enterprises (Saunila, 2020). This capabilities has been examined from several perspectives as a dependent, independent, moderator, and mediator variable (Ruiz-Ortega et al., 2021; Saunila, 2020) across numerous fields of study, with diverse results. Nevertheless, the capacity for innovation has been shown as inadequate for ensuring successful innovation results (Hurtado-Palomino et al., 2022).

The relationship between innovation capability and innovation performance has been examined across several economic sectors (Lau et al., 2010; Yeşil, Büyükbeşe, et al., 2013). Yeşil, Koska, et al. (2013) assert that knowledge-sharing competencies augment innovation capacity, hence enhancing its impact on innovation performance. Yusr (2016) examined the critical mediating function of innovation capability in the correlation between overall quality management techniques and innovation performance. Its significance is also recognized due to the rapid alterations in the life cycles of goods and services. Furthermore, the research conducted by (Rajapathirana & Hui, 2018) contends that effective management of innovation capabilities yields enhanced advantages for innovation performance. The results indicate that innovation capability is a crucial determinant of innovation performance (Irwanti et al., 2020; Zhao et al., 2018). Ugal et al. (2011) emphasized the significance of innovation aptitude in facilitating the connection between knowledge-based resources and innovation performance. Martínez-Román et al. (2015) said that innovation competence positively influences both process and product results (innovation performance). Anh and Thong (2017) emphasize the significance of innovation in promoting and maintaining competitive value creation within the market landscape, as well as enhancing innovation performance. Numerous studies have highlighted the significance of innovation skills as the foundation of innovation performance (Iddris, 2019; Yunita et al., 2019). Nonetheless, the linkages across organizational capacities, particularly in service organizations, need attention (Ruiz-Ortega et al., 2021). In light of the aforementioned, study offer the following study hypothesis:

H5: There is a positive relationship between innovation capabilities and innovation performance.

Environmental orientation and marketing management

The concepts of environmental orientation and marketing management have increasingly combined, as enterprises and academics emphasize incorporating sustainable practices into marketing strategy. Marketing initiatives focused on advancing sustainable products and practices while reducing environmental impact (Cronin et al., 2011; Papadas et al., 2019). Studies such as Ottman (2017); Popovic et al. (2019) examines customer reactions to environmentally friendly advertising and the factors influencing their purchase choices. Another Study concluded that the incorporation of environmental ideals into brand identity enhances customer trust and loyalty (Martinez, 2015). Environmental orientation affects marketing strategy by altering organizations' market positioning (Chen et al., 2015). Companies with robust environmental principles often use new marketing strategies (Eneizan, 2016).

Several studies have explored the association between Environmental orientation and marketing (Becherer et al., 2001; Kilbourne & Beckmann, 1998; Manu & Sriram, 1996; Pickett-Baker & Ozaki, 2008), but there is a little studies in EO-marketing management in developing nation and manufacturing SMEs context. However, these investigations vary in several ways; for instance, this research utilizes distinct foundations and conceptualizations of EO-MM. In this research, EO is regarded as an antecedent and resource orientation of marketing management. Consequently, the primary objective of the present article is to find out if SMEs in developing countries may foster Environmental orientation in their marketing management, leading to the following hypothesis.

H6: Environmental orientation has a positively effect on Marketing management in developing nations.

Social media adoption and marketing management

Social media platforms are essential to marketing strategy, providing channels for virtual brand communities, user-generated content, and viral advertising (Trainor et al., 2014). These platforms enable direct interaction between businesses and customers, improving engagement and brand loyalty. Research demonstrates that social media is essential in formulating brand sustainability strategies. Research highlights the significant influence of social media on marketing management, affecting consumer behavior, brand strategy, and the broader marketing communication framework (Anjorin et al., 2024). Research indicates a significant correlation between social media use and the launch of new products by businesses (Gashi & Gashi, 2021; Öztamur & Karakadılar, 2014). Other study demonstrated that there is a significant relationship between social media use and sound customer relationship management (Trainor et al., 2014). According to Trainor et al. (2014) concluded that social media technology is a panacea for effectively managing customer relationships.

Though several studies conducted on social media and marketing, Regarding the direct relationship between SM adoption and marketing management there are very few studies have been conducted in the literature. However, this study varies in many ways for instance SMA-MM relationship is conducted in this study as the resource orientation and dynamic capabilities. SMA considered as a resource for organization which create unique marketing capabilities. This study conducted in Manufacturing SMEs and social media studies are rare in SME context specially in developing nations. However some study concluded that SM and marketing management relationship are insignificant for instance Savitri et al. (2022) concluded that there was a negligible correlation between Social Media marketing and Brand Image. Consequently, this study proposes that the following hypothesis be used to examine these few studies and conflicting findings

H7: SM adoption has a positively influence on marketing management in developing countries.

Marketing management and innovation performance

Marketing management is planning and executing the creation, pricing, promotion, and distribution of ideas, goods, and services to facilitate exchanges that fulfill individual and organizational goals (Gummesson, 2002). The effect of marketing management was measured in the literature by marketing mix decisions according to different authors (Adams et al., 2019). Marketing mix decision processes involve choices made concerning the packaging, pricing, distribution, and promotion of new products (Kotler, 1991).

Marketing management is essential in influencing innovation performance inside firms and Companies exhibiting robust marketing management techniques often possess a greater market orientation, directly influencing innovation performance (De Luca et al., 2010; Hakala, 2011; Ngamsutti & Ussahawanitchakit, 2016; Tidd, 2001). The connection between marketing management and innovation performance is mutually beneficial (Pippo, 2018). Effective marketing techniques not only augment the success of inventions but also provide a cycle of feedback that promotes ongoing development and inventiveness.

Though there was a limited study regarding marketing management, innovation and performance, some studies concluded the relationship between them (Al-Dmour et al., 2020; Li et al., 2020). According to Chris White et al. (2003) the association between the number of marketing strategy development (MSD) styles used and execution capacity is curvilinear, exhibiting an inverted U-shaped correlation. For that reason marketing management and performance study need to validate by different performance factor specially innovation performance as a subjective measure. Another study concluded that the direct and substantial impacts of value-based pricing and innovation strategies, as well as the indirect influence of market orientation on market performance (De Toni et al., 2022). However this study differ in many ways, for instance, this study employ marketing management is uni-dimensional construct and study focus on manufacturing SME context in developing nations. Other thing is that most study focus on marketing management and financial performance, but this study focus on subjective measure of innovation. That why this study validates the relationship between marketing management and innovation performance for developing hypothesis as following

H8: Marketing management has a positively influence on Innovation performance in developing countries.

Innovation capabilities and marketing management as a mediator

Prior research has proved the direct EO-IC relationship (Makhloufi et al., 2021; Ribau et al., 2017; Sanz-Valle et al., 2011) and EO-innovation performance (Hakala, 2011; Madhoushi et al., 2011; Urban & Maphumulo, 2022; Yadav et al., 2019), but very few studies have used IC as a mediator in SME context. Previous research indicates the necessity of examining the mechanisms influencing the direct relationship between environmental orientation and SME innovation performance. For instance, Chan et al. (2012) investigated the indirect impact of green purchases, customer cooperation, and investment recovery on environmental orientation and the corporate performance. Similarly Moussa et al. (2020) demonstrated that the mediating role of carbon strategy in the link between EO and carbon performance. Therefore, it can be concluded that EO improves SME performance due to the support derived from the indirect impacts of other factors.

Previous research has defined environmental orientation (EO) as a resource that yields significant outcomes, such as enhanced performance in small and medium-sized enterprises (SMEs), contingent upon the deployment of suitable capabilities. Resource-Based View (RBV) theory corroborates this notion, positing that resources must be synchronized with organizational capabilities to attain intended outcomes, a concept particularly pertinent to SMEs. Consequently, this study posits innovation capabilities as a capability that can empower SMEs to optimize their performance by leveraging their resources, specifically EO. We introduce innovation capabilities as a mediating variable for two primary reasons. Firstly, EO alone is inadequate for improving SME performance; thus, SMEs must seek additional support from capabilities like IC. Secondly, SMEs necessitate mechanisms to realize their objectives. Thus, we argue that EO enhances innovation performance indirectly by IC:

H9: IC positive mediates the relationship between EO–innovation performance

The growing ubiquity of digital platforms has transformed how businesses engage with customers, partners, and internal stakeholders. Among these platforms, social media (SM) has emerged as a critical tool for enhancing business innovation—especially for resource-constrained small and medium-sized enterprises (SMEs). Social media adoption facilitates information acquisition, customer interaction, market sensing, and idea generation, all of which are foundational to innovation development (Qalati et al., 2021; Tajudeen et al., 2018). Several scholars suggest that the mere adoption of social media platforms is insufficient to drive innovation unless firms possess the internal capabilities to translate digital inputs into novel outputs (Mention et al., 2019; Muninger et al., 2019; Ooms et al., 2015). This brings to light the importance of innovation capabilities (IC)—a firm's ability to integrate knowledge, reconfigure resources, and generate new products, services, or processes (Ferreira et al., 2020). IC plays a transformational role, enabling firms to convert external knowledge, such as customer feedback and market trends gathered through social media, into actionable innovation (Hartono & Sheng, 2016). From the perspective of the resource-based view (RBV), SM platforms are valuable but not inherently rare or inimitable. Their strategic benefit depends on how effectively a firm uses them in conjunction with its internal resources—particularly dynamic capabilities like innovation (J. B. Barney, 1991). In this context, IC acts as a conduit through which the benefits of SM adoption are fully realized. Without sufficient innovation capabilities, the insights derived from social media may not translate into improved innovation outcomes.

Empirical studies reinforce this view. For instance, Tajudeen et al. (2018) found that while SM use positively correlates with innovation performance, the strength of this relationship depends significantly on internal learning and innovation capabilities. Similarly, Fang et al. (2022); Qalati et al. (2021) identified IC as a partial mediator in the SM–innovation relationship among SMEs in emerging economies, emphasizing the role of absorptive and adaptive capacities in innovation processes. In sum, existing literature supports the argument that innovation capabilities mediate the relationship between social media adoption and innovation performance. While social media provides the channels for knowledge exchange and market engagement, innovation capabilities determine whether and how this information is transformed into innovative outcomes. Thus, it is hypothesized:

H10: IC positive mediates the relationship between SM adoption–innovation performance

Prior research has proved the direct EO-IC relationship (Makhloufi et al., 2021; Ribau et al., 2017; Sanz-Valle et al., 2011) and EO-innovation performance (Hakala, 2011; Madhoushi et al., 2011; Urban & Maphumulo, 2022; Yadav et al., 2019), but very few studies have used marketing management as a mediator in SME context.

Previous research has defined environmental orientation (EO) as a resource that yields significant outcomes, such as enhanced performance in small and medium-sized enterprises (SMEs), contingent upon the deployment of suitable capabilities. Resource-Based View (RBV) theory corroborates this notion, positing that resources must be synchronized with organizational capabilities to attain intended outcomes, a concept particularly pertinent to SMEs. Consequently, this study posits marketing management as a capability that can empower SMEs to optimize their performance by leveraging their resources, specifically EO. We introduce marketing management as a mediating variable for two primary reasons. Firstly, EO alone is inadequate for improving SME performance; thus, SMEs must seek additional support from capabilities like MM. Secondly, SMEs necessitate mechanisms to realize their objectives.

A study demonstrates that marketing capability mediates the relationship between strategic orientations and firm performance, concluding that marketing capability, which encompasses both planning and execution, acts as a "bridge" linking cultural values to enhanced organizational performance (Shin & Damon Aiken, 2012). A further research done in China demonstrated that marketing competence fully mediates the impact of all CSR initiatives on firm performance (Bai & Chang, 2015). Thus, we argue that EO enhances innovation performance indirectly by marketing management:

H11: marketing management positively mediates the relationship EO–innovation performance

Recent studies have highlighted that social media alone does not inherently lead to innovation. Rather, it offers a medium through which firms can enhance marketing processes and deepen customer insights (Wang & Kim, 2017). Firms that strategically manage their marketing functions are better equipped to convert SM data into new products, services, and customer-centric innovations (Ferreira et al., 2020). While numerous studies have demonstrated a direct link between SM adoption and innovation outcomes, emerging research suggests that this relationship may be enhanced or explained through the lens of marketing management (MM) (Fan et al., 2021).

From the perspective of the Resource-Based View (RBV), marketing capabilities are seen as valuable, rare, and inimitable assets that contribute to sustainable competitive advantage (J. Barney, 1991). When combined with digital tools like social media, marketing management becomes a critical enabler of innovation by transforming online engagement into market-driven development initiatives (Qalati et al., 2021). In this context, marketing management is hypothesized to **mediate** the relationship between social media adoption and innovation performance, serving as the mechanism through which SM contributes to innovation.

H12: Marketing management positively mediates the relationship SM adoption –innovation performance

Marketing management as a moderator

Very few studies have evidenced the moderating role of marketing management either in a developed or a developing country context. A very recent survey according to Adams et al.

(2019) showed that the *moderating* effect of *marketing management* in boosting innovation success is positive for all orientations but greatest for organizations with a technology orientation. In addition, another study concluded that the link between social media marketing and the efficacy of the integrated marketing communication model is moderated by customer relationship management (Almomani et al., 2024). In the SME context, Nurjannah et al. (2024) showed that the *moderating* effect of *marketing strategy* on the relationship between total quality *management* and productivity performance of the firms. However, very few studies have employed this variable as a moderator in the SME context, especially in developing nations.

According to Resource-Based View (RBV) theory, this research recognizes marketing management as a resource (J. B. Barney, 1991) that enhances organizational performance. Moreover, the synergy component of RBV theory posits that, in addition to direct impacts, the interaction moderating influence of various capabilities, marketing management, must be regarded as significant (Barney, 2001). Consequently, the ability to utilize various resources and skills is deemed context-specific, necessitating focused consideration of stakeholders' information, which can offer significant opportunities for the capabilities and learning of other organizations to establish a competitive advantage (Alegre & Chiva, 2013). In accordance with Adams et al. (2019) we contend that to enhance the resources–firm–performance link, SMEs must use their capabilities to augment performance.

Marketing management has been recognized a critical factor in organizational performance as it moderate the effect of various performance antecedents (Adams et al., 2019). However, studies have rarely used MM as a potential moderator. One study demonstrated that the moderating effect of internal marketing (IM) on the connection between organizational trust and job engagement (Awad et al., 2024). Several studies have examined the direct marketing management and firm performance link (Jariyachamsit, 2021; Li et al., 2020; Yusr et al., 2022). Thus, we believe that marketing management strengthens the environmental orientation, social media adoption on innovation performance.

H13: Marketing management positively moderates the environmental orientation–innovation performance relationship such that marketing management strengthens the positive environmental orientation–innovation performance relationship.

H14: Marketing management positively moderates the social media adoption – innovation performance relationship such that marketing management strengthens the positive social media adoption – innovation performance relationship.

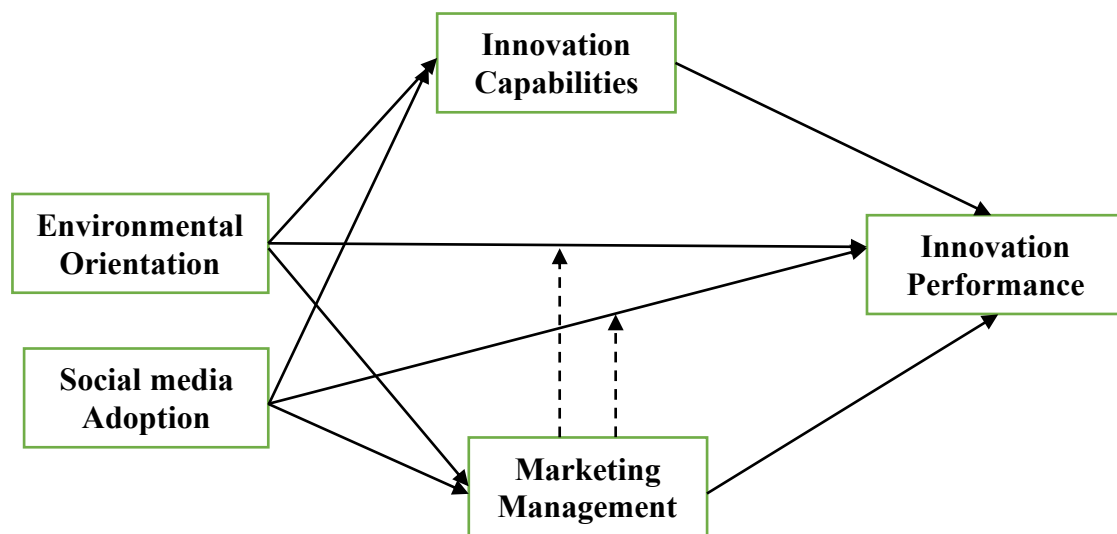


Figure: Conceptual Framework

Methodology

Research design

This study utilizes a research design grounded in positivist philosophy, using quantitative methodology, a cross-sectional time horizon, a survey approach, and a probability sampling technique via stratified random sampling.

Study population and sample

The study collected responses from small and medium companies (SMEs) in the textile industry in Dhaka, Bangladesh, using a survey questionnaire as an instrument. Dhaka is considered as the principal commercial and economic center of Bangladesh, including the majority of the nation's small and medium-sized firms (SMEs). According to the industrial policy of Bangladesh (2016), small and medium-sized enterprises (SMEs) employ for 31 to 120 individuals, whilst medium-sized corporations employ between 121 and 300 individuals. The research focused on textile small and medium-sized firms (SMEs) that employed between 21 and 300 employees.

The Bangladesh Textile Mills Association provided a list of 1,557 SMEs located in Bangladesh (Bangladesh Textile Mills Association, 2023). Specifically, there are 871 SMEs engaged in weaving, 418 in spinning, and 268 in dyeing within the textile manufacturing industry. Considering that 38% of small and medium-sized firms (SMEs) are situated in Dhaka (SME Foundation, 2018), precisely 38% of the samples were extracted from these three textile SMEs to guarantee adequate stratification, resulting in a sample size of 592. The stratified sample comprises 331 weaving samples, 159 spinning samples, and 102 dyeing samples, totalling 592 samples. A total of 375 questionnaires were returned after contacting them. The response rate of 63.34% is considered very acceptable in social science research. Following the screening procedure, fifteen cases were removed from the answer list due to repeated replies and absent numerical values. As a result, a total of 369 cases were evaluated.

Respondent's selection criteria

Each textile SME is represented by one respondent. The research specifically focuses on textile SMEs in Dhaka. This research included senior and intermediate management supervisors from small and medium-sized textile manufacturing businesses in Dhaka. Supervisory-level respondents were chosen for their significant competence in executing innovation inside their firms. our feature facilitated the acquisition of high-quality data for our investigation.

Pre-test and pilot test

The questionnaire's validity and reliability were evaluated by a pre-test (Fornell and Larcker, 1981). Upon evaluating the questionnaire, five subject matter experts provided suggestions. Expert consultation resulted in changes to the questionnaire that confirmed its face validity. The operationalized components were assessed using a five-point Likert scale. A total of 40 respondents' data were collected for the pilot test. Respondents were assured of privacy and secrecy. The questionnaire was revised to gather conclusive data based on the respondent's input. The data's internal consistency and reliability are evaluated using Cronbach's alpha (α). Partial least squares structural equation modeling (PLS-SEM) was used to examine the data. Smart-PLS is used because to its superior statistical capabilities and capacity to manage complicated models, particularly in scenarios with a poor theoretical foundation (Hair et al., 2017). For PLS-SEM, a sample size of 100–200 responses is adequate, and this number of responses is deemed appropriate (Silva et al., 2014).

Survey items and data collection

The measurement scale for the construct is derived from prior research. The distribution of Google Forms and paper questionnaires was conducted to improve the survey's response rate. One month after the first distribution, further phone calls were conducted.

Bias

This study used three approaches to detect common method bias (CMB). First, we used Harman's single factor test, which revealed that a single factor explained only 23.03% of variance (under the acceptable threshold of 50%)(Podsakoff et al., 2003). Second, we used the variance inflation factor (VIF), which is considered a full collinearity approach and is widely used, using SmartPLS 4.0(Hair et al., 2019); the VIF values ranged between 1.275 and 2.49 , which is less than the acceptable threshold of 3 (Hair et al., 2019) (Table 1). Third, Bagozzi et al. (1991) proposed that if the correlation among the constructs is >0.9 , there is evidence of CMB; in our case, none of the constructs was found to be greater than this minimum cut-off value (Table 2).

Measures

we measured environmental orientation with four items (Feng et al., 2018). The first two items were taken from internal environmental orientation and the second two from external environmental orientation. the rationale for the modification was to adopt the EO dimensions to the SME context. Social media (SM) adoption was measured using five items adapted from Fang et al. (2022); Parveen et al. (2016). The IC scale was adapted from Kyrddoda et al. (2023) and was measured using four items , marketing management as a marketing mix decision was evaluated using five items modified from the previous study (Adams et al., 2019; Appiah-Adu, 2000), Four items were taken from the study of Iqbal et al. (2021); Wang and Ahmed (2004) to measure innovation performance. Notably, one item from social media

adoption value, 1 item from innovation capabilities and 1 items from innovation performance were dropped due to low regression weights(Hair et al., 2017).

Results and Analysis

Non-response bias and common method bias

The Wallace and Cooke (1990) method is used in this study to evaluate non-response bias (NRB). To guarantee that a survey accurately represents the intended research population, non-response bias (NRB) is calculated. After respondents get the surveys, responses are gathered within 30 days. While responds received after 30 days are referred to as late responses, they are categorized as early responses. The author determined the mean and standard deviation for the first and final 30 respondents. Since there was no statistically significant difference between the two groups, the analysis suggests that there is no non-response bias (NRB) in the research. To determine if common method bias (CMB) existed, the research used the single-factor Harmen test (Podsakoff et al., 2003). The computed variance of 28.76%, which is less than 50%, indicates that, in the context of the research, the existence of CMB is not a serious problem.

Demographic Data

In the analysis of 369 textile SMEs, Table 1 shows that **57%** of participating textiles were weaving SMEs, 26.2% of the sample companies were engaged in spinning, and 17.8% from dyeing. Most of the companies (40%) were in operations for more than 15 years. The majority (54%) of the textile SMEs had an average of 31-121 employees. Textile management were mostly males (74.8%), and only 25.2% were females. A rationale for this might be the nature of job and work loading. The highest number of the age category of 40-49 years (28.4%)

Table 1: Demographic profile

Respondents		Frequency	Percentage
Gender	Male	276	74.8
	Female	93	25.2
Age (years)	Less than 20	27	7.4
	20-29	93	25.2
	30-39	86	23.4
	40-49	105	28.4
	50 and above	58	15.6
Education	Basic/Secondary	17	4.5
	Undergraduate	110	29.8
	Master's	160	43.5
	Others	82	22.2
Age distribution of Business	Less than 3 years	44	12
	03-05 years	53	14
	06-10 years	38	10
	11-15 years	86	23
	More than 15 years	148	40
No. of employee	0-30	74	20
	31-120	199	54
	121-300	96	26
Position	Owner	119	32.3
	Executive	157	42.5
	Manager	93	25.2
Industry Classification	Weaving	207	57
	Spinning	96	26.2
	Dyeing	66	17.8

Measurement Model

The analysis of primary data was performed using SPSS v25 and SmartPLS 4. Before assessing the proposed correlations, the research confirmed the anticipated reliability and validity of the model.

Convergent Validity

The findings from Table 2 indicate that all the factor loadings (FL) of the items above 0.5 (Hair et al., 2017), the average variance extracted (AVE) higher than the 0.5 thresholds (Hair et al., 2017), and the Cronbach's alpha and composite reliability (CR) were above 0.7. These results indicate that the measure has acceptable reliability and significant internal consistency (Hair et al., 2017).

Table 2: Convergent Validity

Construct	Items	F. L	CA	CR	AVE
Environmental orientation	EO1	0.928	0.837	0.851	0.675
	EO2	0.805			
	EO3	0.791			
	EO4	0.750			
Social Media Adoption	SMA1	0.836	0.866	0.872	0.712
	SMA2	0.822			
	SMA3	0.837			
	SMA4	0.880			
Innovation capabilities	IC1	0.758	0.778	0.790	0.695
	IC2	0.906			
	IC3	0.831			
Innovation performance	IP1	0.889	0.795	0.808	0.712
	IP2	0.748			
	IP3	0.888			
Marketing Management	MM1	0.833	0.850	0.864	0.625
	MM2	0.766			
	MM3	0.706			
	MM4	0.841			
	MM5	0.798			

Discriminant validity

The Heterotrait–Monotrait (HTMT) ratio and Fornell and Larcker (1981) criteria were implemented to verify discriminant validity. Table 3 illustrates that the correlation between AVE and other variables is lower than its square root. Table 4 confirms that the discriminant validity is adequate, as none of the values in the table are greater than or equal to the two thresholds of <0.90 (Henseler et al., 2015) and <0.85 (Kline, 2015). Henseler et al. (2015) introduced the HTMT approach, establishing discriminant validity between variable pairs when correlation values are below 0.90. Table 4 below indicates that the HTMT values are below the threshold of 0.90.

Table 3: Discriminant validity assessment using heterotrait-monotrait criteria

	EO	IC	IP	MM	SMA
EO					
IC	0.388				
IP	0.588	0.290			
MM	0.536	0.799	0.587		
SMA	0.543	0.628	0.535	0.684	

Table 4: Discriminant validity assessment using Fornell and Larcker criteria

	EO	IC	IP	MM	SMA
EO	0.821				
IC	0.317	0.833			
IP	0.483	0.233	0.844		
MM	0.461	0.664	0.481	0.790	
SMA	0.470	0.526	0.459	0.600	0.844

Assessment of the structural model

Hair et al. (2017) outlined six criteria for evaluating the structural model using PLS-SEM. In the preliminary phase of evaluating the structural model, it is crucial to resolve latent collinearity concerns. Furthermore, it is essential to evaluate the importance and relevance of the structural model connection by examining the variance explained by the dependent variable (R^2), the effect size (f^2), and the predictive relevance (Q^2). Furthermore, it is essential to evaluate the associated t-values of the path coefficient by bootstrapping with 5,000 resamples. The outcomes of R-square, effect size (f-square), collinearity (inner VIF), and predictive significance (Q-square) are shown in Table 5.

Table 5: Assessment of the structural model

R-square	Endogenous Variables	R-square	R-square adjusted	0.26: Substantial 0.13: Moderate 0.02: Weak (Hair et al., 2017)	
	IC	0.283	0.279		
	IP	0.407	0.397		
	MM	0.401	0.398		
Effect size (F-square)	Exogenous Variables	IC	IP		0.26: Substantial 0.13: Moderate 0.02: Weak (Hair et al., 2017)
		IC	IP	MM	
	EO	0.009	0.037	0.068	
	IC		0.057		
	IP				
	MM		0.142		
	SMA	0.255	0.073	0.316	
	MM x EO		0.023		
	MM x SMA		0.066		
Collinearity (inner VIF)	Exogenous Variables	IC	IP	MM	VIF <= 5.0 (Hair et al., 2017)
	EO	1.284	1.712	1.284	
	IC		1.922		
	IP				
	MM		2.501		
	SMA	1.284	1.851	1.284	
	MM x EO		1.283		
	MM x SMA		1.274		
Predictive relevance (Q-square)	Endogenous Variables	Q ² predict	RMSE	MAE	Value larger than zero (0) indicates predictive relevance (Hair et al.;2017)
	IC	0.270	0.861	0.684	
	IP	0.283	0.852	0.651	
	MM	0.385	0.789	0.608	
Notes : RMSE= Root-mean-square error MAE= Mean Absolute error					

Hypothesis testing

Table 6 Hypothesis testing

		Original sample (O)	Sample mean (M)	Stand ard devia tion (STD EV)	T statistics (O/STDEV)	P values	Remarks
H1	EO -> IP	0.194	0.195	0.058	3.316	0.001	Supported
H2	SMA -> IP	0.283	0.285	0.055	5.102	0.000	Supported
H3	EO -> IC	0.089	0.089	0.058	1.521	0.128	Not supported
H4	SMA -> IC	0.484	0.486	0.044	11.097	0.000	Supported
H5	EO -> MM	0.229	0.235	0.068	3.393	0.001	Supported
H6	SMA -> MM	0.493	0.488	0.057	8.598	0.000	Supported
H7	IC -> IP	-0.255	-0.256	0.055	4.647	0.000	Supported
H8	MM -> IP	0.459	0.460	0.068	6.756	0.000	Supported
	Indirect effect						
H9	EO -> IC -> IP	-0.023	-0.022	0.016	1.429	0.153	Not supported
H10	SMA -> IC -> IP	-0.123	-0.125	0.031	3.966	0.000	Supported
H11	EO -> MM -> IP	0.105	0.109	0.037	2.849	0.004	Supported
H12	SMA -> MM -> IP	0.226	0.224	0.040	5.631	0.000	Supported
	Moderating effect						
H13	MM x EO -> IP	-0.101	-0.091	0.045	2.235	0.025	supported
H14	MM x SMA -> IP	0.210	0.198	0.061	3.462	0.001	supported

Structural model with inner model with p-value

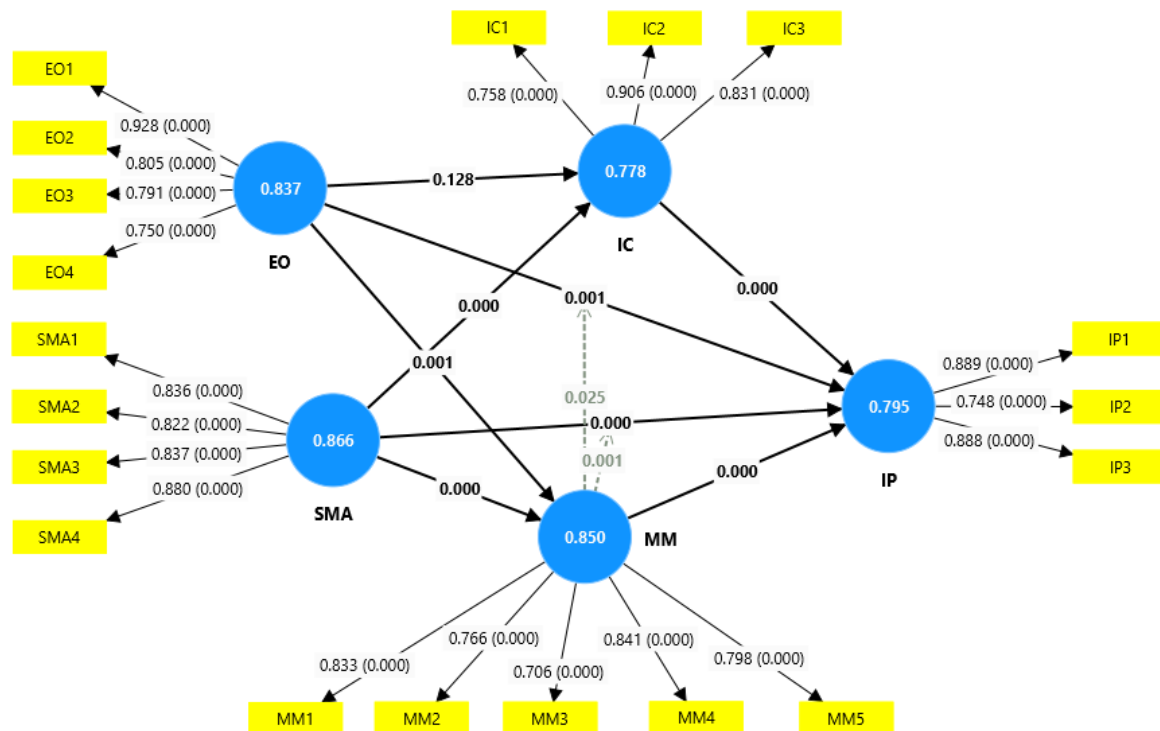


Figure 2: Structural model with inner model p-value

Discussion

This study used a quantitative approach to test the Environmental orientation and social media adoption on innovation performance in manufacturing SMEs. Besides, the mediating role of IC and mediated moderating roles of marketing management in the SME context. The study outcomes were found interesting, given that higher level of EO and SMA leads to greater level of innovation performance. This findings support the RBV theory that gaining competitive advantages is based on applying organization's bundle of resources(Wernerfelt, 1984).

The EO-innovation performance relationship was positive ($p=0.001$), supporting H1. Results showed that two concepts are relevant, supporting that EO is crucial in enhancing the innovation performance of manufacturing SMEs. According to the Resource-Based View (RBV), Environmental orientation (EO) is an intangible resource considered the main driver of competitive advantages that enhance innovation performance. Present study findings are consistent with Ardito et al. (2021), who studied SMEs in developing countries, arguing that EO is a significant factor for innovation performance.

Regarding SM Adoption - Innovation performance, SM had a significant association with innovation performance ($p=0.000$), supporting H2. The use of social media profoundly influences innovation performance by improving communication, cooperation, and information dissemination among people and organizations. Companies may immediately communicate with consumers, get real-time input, and rapidly detect new trends using platforms such as Twitter and LinkedIn. This prompt access to market knowledge enables rapid modifications to goods and services, promoting agility and responsiveness. Additionally, social media promotes cross-functional cooperation both internally and outside, allowing disparate viewpoints to merge and generate novel concepts. By efficiently

using these platforms, organizations may optimize innovation processes, decrease time-to-market for new products, and ultimately strengthen their competitive advantage in swiftly changing markets.

Regarding the effect of environmental orientation and IC, the relationship is not significant ($p=0.145$), resulting H3 was not supported. The correlation between environmental orientation and innovation capabilities may be limited due to various factors. Although environmental orientation prioritizes sustainability and eco-friendly practices, its direct impact on innovation capabilities may be overshadowed by other pivotal elements such as organizational culture, technological infrastructure, and financial resources. Enterprises may implement environmental practices primarily as a means of compliance or as a marketing tactic, rather than as a catalyst for innovation. Furthermore, the successful integration of environmental orientation into innovation processes necessitates alignment with overarching strategic objectives, which may be absent in organizations that regard sustainability as a secondary concern. This misalignment can result in a diminished or negligible effect on innovation capabilities, as the resources and efforts allocated to sustainability are not effectively directed toward fostering innovative practices.

SMA-IC relationship was found positive ($p=0.000$), resulting in H4 being accepted. The use of social media adoption and innovation capabilities is seen favorably since they enable companies and people to interact, communicate, and cooperate in unparalleled ways. The use of social media allows organizations to interact directly with clients, enhancing connections and offering a medium for immediate feedback, market intelligence, and trend evaluation, thus facilitating informed decision-making. Social media enhances innovation capabilities by acting as a catalyst for creativity, facilitating the rapid creation and dissemination of ideas, products, and services. The worldwide scope and viral characteristics of social media enhance prospects for innovation, facilitating the scaling of solutions, the establishment of networks, and the maintenance of competitiveness in dynamic markets. This study findings also consistent with previous study (Fan et al., 2021; Fang et al., 2022). Environmental orientation and marketing management relationship was found positive ($p=0.000$) resulting H5 supported. The relationship between environmental orientation and marketing management is well established in academic and business literature because organizations are increasingly recognizing that sustainability and environmental considerations can be a strategic advantage in marketing. Studies found that Consumers are more environmentally conscious and prefer brands that are eco-friendly (Lorek, 2015). Environmental orientation helps businesses stand out in crowded markets. Marketers can use sustainability efforts (e.g., green packaging, carbon-neutral products) as unique selling points. Environmental regulations influence product design, packaging, and promotion. Marketing must adapt messaging and offerings to remain compliant and avoid reputational damage. Environmental orientation drives innovation (e.g., biodegradable materials, energy-efficient logistics) (Moshood et al., 2022). Marketing communicates these innovations as value propositions to the target audience.

Social media adoption and marketing management relationship was found positive ($p=0.000$), resulting H6 supported. The implementation of social media markedly improves marketing management by equipping organizations with robust tools to more effectively contact and engage target consumers. Platforms such as Facebook, Instagram, and LinkedIn provide a direct communication route, allowing marketers to disseminate information, cultivate connections, and promote items instantaneously. The use of social media enables accurate targeting via sophisticated analytics and segmentation, allowing organizations to customize their marketing strategies for certain demographics and customer habits.

Moreover, social media enables economical campaigns with quantifiable outcomes, enabling marketers to refine methods and enhance performance. The interactive aspect cultivates brand loyalty and trust via two-way communication, user-generated content, and genuine interaction. Consequently, social media has emerged as an essential element of contemporary marketing management, fostering innovation and customer-focused strategies. prior study also supports the findings (Dahnil et al., 2014; Rosita et al., 2023) Regarding IC-IP relationship, there was a positive relationship between the constructs. The hypothesis H7 is supported ($p=0.000$). The correlation between innovation capabilities and innovation performance exists because innovation capabilities underpin the successful generation, implementation, and sustainability of creative ideas, hence directly influencing performance results. Innovation capabilities include talents, resources, procedures, and a culture that fosters innovation and experimentation. Organizations with robust innovation skills are more adept at recognizing market possibilities, adjusting to changes, and creating unique goods, services, or processes. These qualities result in enhanced innovative performance, marked by competitive advantage, greater market share, and superior financial outcomes. Furthermore, the interplay of competencies such as information dissemination, technology integration, and cooperation cultivates an atmosphere conducive to innovation, facilitating ongoing and sustained enhancements in performance. prior work also supports the finding (Fang et al., 2022; Lau et al., 2010; Maldonado-Guzmán et al., 2019; YuSheng & Ibrahim, 2020).

Marketing management significantly affect the innovation performance, thus hypothesis H8 supported ($p=0.000$). Marketing management profoundly influences innovation performance by serving as a link between innovative products and market requirements, therefore ensuring that new concepts correspond with consumer tastes and desires. Marketing management utilizes market research to provide critical insights into consumer behavior, emerging trends, and competitive environments, hence informing the creation of pertinent and significant innovations. Effective marketing tactics facilitate the placement and promotion of new products or services, hence enhancing their acceptance and market penetration. Moreover, marketing management promotes interdepartmental cooperation, including consumer input into the innovation process, therefore augmenting product relevance and success. Marketing management is essential in enhancing overall innovation performance by ensuring that inventions align with market expectations and supporting their effective launch. This study is also consistent with prior studies (Adams et al., 2019).

The findings empirically supported the mediation of IC for SMA -> IC -> IP relationship but not supported the EO -> IC -> IP relationship. Regarding the mediation of MM for EO -> MM -> IP and SMA -> MM -> IP relationship, the study finding supported the relationship (supporting H10, H11, H12 except H9). The present study is consistent with Prior studies (AlTaweel & Al-Hawary, 2021; Taleb et al., 2023) Though the mediation effect of marketing management was very rare in literature, previous study (Abrokwah-Larbi, 2024; Ekasari et al., 2024; Raji et al., 2019) also support the present study findings.

Finally, the empirical findings confirmed the moderation effect of marketing management on both relationships (MM x EO -> IP and MM x SMA -> IP) and supporting H13 and H14. The present study findings suggest that if manufacturing SMEs have low marketing management practices, EO and SMA will have little influence on innovation performance, and vice versa. To summarize, the effect of Environmental orientation and social media adoption on innovation performance is greater when manufacturing SMEs engage in marketing management in their business operations. The present study is also

consistent with the prior study conducted by Adams et al. (2019) which concluded that marketing management significantly moderates the relationship between strategic orientation and innovation performance in the French manufacturing industries.

Contributions

Theoretical contribution

This research offers many theoretical contributions. Firstly, the present study highlights the significant mediating effect of innovation capabilities and the moderating impact of marketing management within the context of SMEs in developing nations. Some of the studies have explored the effect of strategic orientation on innovation performance (Adams et al., 2019; Joesoep & Daihani, 2023; Shah, 2022; Tutar et al., 2015). However, This study examines the interplay between environmental orientation, social media adoption, and marketing management within the framework of innovation performance, an issue that has been notably underrepresented in the existing literature on innovation.

Secondly, social media adoption was considered in this study as a resource and organizational capability which is verified by RBV theory. Most of the studies focused on SMA as a technology adaption model view, but this study focuses on SMA as a resource. Thirdly marketing management as moderator in this study is considered as unique organizational capability that is supported by DCV theory. Relatively less attention has been given in the empirical literature to the factors that may moderate the relationship between strategic orientation and innovation performance, but this study employs marketing management as very rare moderating factors.

Practical contributions

This paper has several valuable management implications. at first our findings confirm the advantages of environmental orientation, demonstrating that both internal and external environmental orientation are favorably associated with innovative performance. This study indicates that businesses need to include environmental considerations into their decision-making processes and mitigate the adverse effects of their goods, services, and operational operations. This research provides empirical evidence for the significant role of environmental orientation in enhancing innovation performance.

The present study further corroborates the understanding of how the effective adoption and implementation of social media (SM) can enhance the innovation performance of small and medium-sized enterprises (SMEs). Specifically, the adoption of SM has a substantial impact on SMEs, facilitating cost reduction, fostering innovation, and providing a competitive advantage in marketing activities, processes, and operations. Moreover, the proactive utilization of SM enhances relationships between firms and customers, thereby increasing customer loyalty.

The most extensively used social media apps were social networking services. Prior to selecting the application(s) for adoption, decision-makers must collaborate closely with the predominant social media tools in their respective countries, namely Facebook in Bangladesh, WhatsApp in India, and WeChat in China. Companies need to promote the utilization of social media by workers for routine tasks and marketing endeavors, as it serves as a more economical and expedient means of communication, information dissemination, and innovation. Small and medium-sized enterprises in developing nations should embrace social media, as it provides several innovative business opportunities, therefore fostering and maintaining intellectual capital.

Limitations and future study

This study is not free from limitations, all of which avenues for future research. This study was conducted in developing nations focusing on SMEs located in Bangladesh. Therefore, analysis in different developing countries (Pakistan, India, Malaysia and Middle East region) and cultures with regard to EO, SM adoption and marketing management would be interesting research avenues. Furthermore, the present research employed a unidimensional construct, however, future studies can use a multi-dimensional construct (i.e.. EO, SMA, IC, MM) to better understand the selected variables in the SME context and to test the validate the findings of the present study.

This study utilizes IC and marketing management as mediators; other mediators may be used to enhance the comprehension of innovation performance across various settings. This study used marketing management as a moderator; future research might include other influential moderators such as supply chain integration, organizational learning, political connections, and networking capabilities. The current study used cross-sectional data; future research may be undertaken using a longitudinal approach.

Conclusion

This study aims to investigate the links among environmental orientation, social media, innovation capabilities, and marketing management regarding the innovation performance of textile manufacturing SMEs in Bangladesh. This study identified a positive correlation between Environmental Orientation, Social Media adoption, and innovation performance, mediated by innovation capabilities and marketing management. The study identified favorable direct correlations between environmental orientation, social media adoption, and innovation performance in manufacturing SMEs, with the exception of environmental orientation's impact on innovation capabilities. To enhance the innovation performance of SMEs, it is imperative to improve and concentrate on Environmental Orientation, Social Media adoption in their business decisions. This association is reinforced by two mediating variables: innovation capabilities and marketing management, whereas innovation capabilities do not mediate the relationship between environmental orientation and innovation performance. Ultimately, marketing management considerably moderates the link between environmental orientation, social media adoption, and innovation performance. This study framework provides an effective guideline for SME stakeholders to foster innovation inside their specific enterprises. Notwithstanding Bangladesh's poor innovation performance indicated by GII-2022/23, this framework functions as a guideline for aiding SMEs in overcoming challenges and prospering in today's competitive landscape.

References

- Abrokwah-Larbi, K. (2024). Transforming metaverse marketing into strategic agility in SMEs through mediating roles of IMT and CI: theoretical framework and research propositions. *Journal of Contemporary Marketing Science*, 7(1), 56-83.
- Abu Bakar, A. R., Ahmad, S. Z., & Ahmad, N. (2019). SME social media use: A study of predictive factors in the United Arab Emirates. *Global Business and Organizational Excellence*, 38(5), 53-68.
- Adams, P., Freitas, I. M. B., & Fontana, R. (2019). Strategic orientation, innovation performance and the moderating influence of marketing management. *Journal of Business Research*, 97, 129-140.
- Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N. I., & Mohd Shuib, N. L. (2015). Factors influencing the use of social media by SMEs and its performance outcomes. *Industrial Management & Data Systems*, 115(3), 570-588.

- Al-Dmour, H. H., Asfour, F., Al-Dmour, R., & Al-Dmour, A. (2020). The effect of marketing knowledge management on bank performance through fintech innovations: A survey study of Jordanian commercial banks. *Interdisciplinary Journal of Information, Knowledge, and Management*, 15, 203.
- Alegre, J., & Chiva, R. (2013). Linking entrepreneurial orientation and firm performance: The role of organizational learning capability and innovation performance. *Journal of small business management*, 51(4), 491-507.
- Almomani, H. M., Alhalalmeh, M. I., Hijjawi, G. S., Eldahamsheh, M. M., & Al-Hawary, S. I. S. (2024). Moderating effect of customer relationship management on the relationship between electronic marketing and effectiveness of integrated model of marketing communication. *International Journal of Business Information Systems*, 47(1), 91-105.
- AlTaweel, I. R., & Al-Hawary, S. I. (2021). The mediating role of innovation capability on the relationship between strategic agility and organizational performance. *Sustainability*, 13(14), 7564.
- Anh, T. T., & Thong, N. N. (2017). Innovation of the firm: How to create performance from capability. *Journal of Economic Development*, 24(4), 64-84.
- Anjorin, K. F., Raji, M. A., & Olodo, H. B. (2024). The influence of social media marketing on consumer behavior in the retail industry: A comprehensive review. *International Journal of Management & Entrepreneurship Research*, 6(5), 1547-1580.
- Appiah-Adu, K. (2000). The impact of marketing mix decisions on performance: a study of foreign and domestic firms in a liberalized economy. *Journal of Global Marketing*, 13(2), 7-30.
- Ardito, L., Raby, S., Albino, V., & Bertoldi, B. (2021). The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance. *Journal of Business Research*, 123, 44-56.
- Awad, A. H. I., Elnaggar, M. K., Abd, A. A. E.-K. G., Ahmed, M. F. A. E.-L., & Wahba, S. A. M. (2024). The Moderating Role of Internal Marketing on the Relationship Between Organizational Trust and Job Engagement: Evidence From Hotels and Travel Agencies. *Geo Journal of Tourism and Geosites*, 53(2), 554-563.
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative science quarterly*, 421-458.
- Bai, X., & Chang, J. (2015). Corporate social responsibility and firm performance: The mediating role of marketing competence and the moderating role of market environment. *Asia Pacific Journal of Management*, 32, 505-530.
- Baquero, A. (2025). Optimizing green knowledge acquisition through entrepreneurial orientation and resource orchestration for sustainable business performance. *Marketing Intelligence & Planning*, 43(2), 241-271.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Barney, J. B. (1991). The resource based view of strategy: Origins, implications, and prospects. *Journal of management*, 17(1), 97-211.
- Barney, J. B. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes. *Academy of management review*, 26(1), 41-56.
- Becherer, R. C., Halstead, D., & Haynes, P. (2001). Marketing orientation in SMEs: effects of the internal environment. *Journal of Research in Marketing and Entrepreneurship*, 3(1), 1-17.
- Bertschek, I., & Kesler, R. (2022). Let the user speak: Is feedback on Facebook a source of firms’ innovation? *Information Economics and Policy*, 60, 100991.
- Borah, P. S., Iqbal, S., & Akhtar, S. (2022). Linking social media usage and SME's sustainable performance: The role of digital leadership and innovation capabilities. *Technology in Society*, 68, 101900.
- Carfora, A., Scandurra, G., & Thomas, A. (2021). Determinants of environmental innovations supporting small-and medium-sized enterprises sustainable development. *Business Strategy and the Environment*, 30(5), 2621-2636.

- Chan, R. Y., He, H., Chan, H. K., & Wang, W. Y. (2012). Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management*, 41(4), 621-630.
- Chen, Y., Tang, G., Jin, J., Li, J., & Paillé, P. (2015). Linking market orientation and environmental performance: The influence of environmental strategy, employee's environmental involvement, and environmental product quality. *Journal of Business Ethics*, 127, 479-500.
- Chris White, J., Conant, J. S., & Echambadi, R. (2003). Marketing strategy development styles, implementation capability, and firm performance: Investigating the curvilinear impact of multiple strategy-making styles. *Marketing Letters*, 14, 111-124.
- Cronin, J. J., Smith, J. S., Gleim, M. R., Ramirez, E., & Martinez, J. D. (2011). Green marketing strategies: an examination of stakeholders and the opportunities they present. *Journal of the Academy of Marketing Science*, 39, 158-174.
- Dahnil, M. I., Marzuki, K. M., Langgat, J., & Fabeil, N. F. (2014). Factors influencing SMEs adoption of social media marketing. *Procedia-Social and Behavioral Sciences*, 148, 119-126.
- Danso, A., Adomako, S., Amankwah-Amoah, J., Owusu-Agyei, S., & Konadu, R. (2019). Environmental sustainability orientation, competitive strategy and financial performance. *Business Strategy and the Environment*, 28(5), 885-895.
- De Luca, L. M., Verona, G., & Vicari, S. (2010). Market orientation and R&D effectiveness in High-Technology firms: An empirical investigation in the biotechnology industry. *Journal of Product Innovation Management*, 27(3), 299-320.
- De Marchi, V. (2012). Environmental innovation and R&D cooperation: Empirical evidence from Spanish manufacturing firms. *Research policy*, 41(3), 614-623.
- De Toni, D., Reche, R. A., & Milan, G. S. (2022). Effects of market orientation, innovation strategies and value-based pricing on market performance. *International Journal of Productivity and Performance Management*, 71(8), 3556-3580.
- Dibrell, C., B Craig, J., Kim, J., & J Johnson, A. (2015). Establishing how natural environmental competency, organizational social consciousness, and innovativeness relate. *Journal of Business Ethics*, 127, 591-605.
- Dutta, S., Lanvin, B., Wunsch-Vincent, S., & León, L. R. (2022). *Global innovation index 2022:: what is the future of innovation-driven growth?* (Vol. 2000). WIPO.
- Ekasari, S., Diposumarto, N. S., & Muharam, H. (2024). The Influence of Price Perception, Brand Image, and Celebrity Endorsement on Purchase Intention: The Mediating Role of Online Promotion and e-WOM. *The Journal of Academic Science*, 1(6), 648-655.
- Elliot, S. (2011). Transdisciplinary perspectives on environmental sustainability: a resource base and framework for IT-enabled business transformation. *MIS quarterly*, 197-236.
- Eneizan, B. (2016). Effects of green marketing strategy on the financial and non-financial performance of firms: A conceptual paper. *Arabian Journal of Business and Management Review*.
- Fan, M., Qalati, S. A., Khan, M. A. S., Shah, S. M. M., Ramzan, M., & Khan, R. S. (2021). Effects of entrepreneurial orientation on social media adoption and SME performance: The moderating role of innovation capabilities. *PloS one*, 16(4), e0247320.
- Fang, G. G., Qalati, S. A., Ostic, D., Shah, S. M. M., & Mirani, M. A. (2022). Effects of entrepreneurial orientation, social media, and innovation capabilities on SME performance in emerging countries: A mediated-moderated model. *Technology Analysis & Strategic Management*, 34(11), 1326-1338.
- Feng, L., Zhao, W., Li, H., & Song, Y. (2018). The effect of environmental orientation on green innovation: Do political ties matter? *Sustainability*, 10(12), 4674.
- Ferreira, J., Coelho, A., & Moutinho, L. (2020). Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation. *Technovation*, 92, 102061.
- Gadenne, D. L., Kennedy, J., & McKeiver, C. (2009). An empirical study of environmental awareness and practices in SMEs. *Journal of Business Ethics*, 84, 45-63.

- Gashi, R., & Gashi, H. (2021). Impact of social media on the development of new products, marketing and customer relationship management in Kosovo. *Emerging Science Journal*, 5(2).
- Gemici, E., & Zehir, C. (2023). High-performance work systems, learning orientation and innovativeness: the antecedent role of environmental turbulence. *European Journal of Innovation Management*, 26(2), 475-503.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California management review*, 33(3), 114-135.
- Gummesson, E. (2002). Practical value of adequate marketing management theory. *European journal of marketing*, 36(3), 325-349.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, 45, 616-632.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24.
- Hakala, H. (2011). Strategic orientations in management literature: Three approaches to understanding the interaction between market, technology, entrepreneurial and learning orientations. *International Journal of Management Reviews*, 13(2), 199-217.
- Hartono, R., & Sheng, M. L. (2016). Knowledge sharing and firm performance: the role of social networking site and innovation capability. *Technology Analysis & Strategic Management*, 28(3), 335-347.
- Helfat, C. E., Kaul, A., Ketchen Jr, D. J., Barney, J. B., Chatain, O., & Singh, H. (2023). Renewing the resource-based view: New contexts, new concepts, and new methods. *Strategic Management Journal*, 44(6), 1357-1390.
- Henderson, A., & Bowley, R. (2010). Authentic dialogue? The role of “friendship” in a social media recruitment campaign. *Journal of Communication Management*, 14(3), 237-257.
- Hitchen, E. L., Nylund, P. A., Ferràs, X., & Mussons, S. (2017). Social media: Open innovation in SMEs finds new support. *Journal of Business Strategy*, 38(3), 21-29.
- Hurtado-Palomino, A., De la Gala-Velásquez, B., & Ccorisapra-Quintana, J. (2022). The interactive effect of innovation capability and potential absorptive capacity on innovation performance. *Journal of Innovation & Knowledge*, 7(4), 100259.
- Iddris, F. (2019). Innovation capability and product innovation performance: The case of low-tech manufacturing firms. *European business review*, 31(5), 646-668.
- Ioanid, A., Deselnicu, D. C., & Militaru, G. (2018). The impact of social networks on SMEs’ innovation potential. *Procedia Manufacturing*, 22, 936-941.
- Iqbal, S., Moleiro Martins, J., Nuno Mata, M., Naz, S., Akhtar, S., & Abreu, A. (2021). Linking entrepreneurial orientation with innovation performance in SMEs; the role of organizational commitment and transformational leadership using smart PLS-SEM. *Sustainability*, 13(8), 4361.
- Irwanti, A., Haryadi, P., & Handoko, L. (2020). The role of innovation capacity and technology adoption towards product innovation performance measurement in micro small enterprises food industry. IOP Conference Series: Earth and Environmental Science,
- Jafari, M., & Rezaee, F. (2014). The effect of resource based view on sustainable capability advantage. *Management Science Letters*, 4(12), 2537-2554.
- Jariyachamsit, S. (2021). Effect of Customer Loyalty, Innovative Management, Knowledge Management and Marketing Management on Business Performance of Three Stars Hotel in Eastern Region of Thailand. *Review of International Geographical Education Online*, 11(5), 359-371.
- Joesoep, B. J., & Daihani, D. U. (2023). Impact Of Strategic Digital Orientation and Digital Dynamic Capability on Company Performance as Mediated by Company Readiness and Digital Innovation. *International Journal of Operations and Quantitative Management*, 29(2), 86-114.

- Jussila, J. J., Kärkkäinen, H., & Lyytikä, J. (2011). Towards maturity modeling approach for social media adoption in innovation. The 4th ISPIM Innovation Symposium, 29 November-2 December, 2011, Wellington, New Zealand.
- Kilbourne, W. E., & Beckmann, S. C. (1998). Review and critical assessment of research on marketing and the environment. *Journal of marketing management*, 14(6), 513-532.
- Kim, J., Paek, B., & Lee, H. (2022). Exploring innovation ecosystem of incumbents in the face of technological discontinuities: Automobile firms. *Sustainability*, 14(3), 1606.
- Kotler, P. (1991). Marketing Management 7/E, Phillip Kotler tape 2.
- Kyrdoda, Y., Balzano, M., & Marzi, G. (2023). Learn to survive crises: The role of firm resilience, innovation capabilities and environmental dynamism. *Technology in Society*, 74, 102285.
- Lau, A. K., Yam, R. C., & Tang, E. P. (2010). The impact of technological innovation capabilities on innovation performance: An empirical study in Hong Kong. *Journal of Science and Technology Policy in China*, 1(2), 163-186.
- Le, T. T., & Chakrabarti, S. (2023). Social media and business innovation capabilities toward enhancing firm's performance: an empirical research from environmental quality approach. *Management of Environmental Quality: An International Journal*.
- Leonidou, L. C., Christodoulides, P., & Thwaites, D. (2016). External determinants and financial outcomes of an eco-friendly orientation in smaller manufacturing firms. *Journal of small business management*, 54(1), 5-25.
- Leonidou, L. C., Leonidou, C. N., & Kvasova, O. (2010). Antecedents and outcomes of consumer environmentally friendly attitudes and behaviour. *Journal of marketing management*, 26(13-14), 1319-1344.
- Li, Y., Kim, J., & Lee, Y. W. (2020). Marketing Knowledge Management and Innovation Performance: Examining the Moderating Role of Business Environmental Volatility. *Asia Marketing Journal*, 22(3), 3.
- Lichtenthaler, U., & Lichtenthaler, E. (2009). A capability-based framework for open innovation: Complementing absorptive capacity. *Journal of management studies*, 46(8), 1315-1338.
- Lorek, A. (2015). Current trends in the consumer behaviour towards eco-friendly products. *Economic and Environmental Studies*, 15(2 (34)), 115-129.
- Lukovszki, L., Rideg, A., & Sipos, N. (2021). Resource-based view of innovation activity in SMEs: an empirical analysis based on the global competitiveness project. *Competitiveness Review: An International Business Journal*, 31(3), 513-541.
- Madhoushi, M., Sadati, A., Delavari, H., Mehdivand, M., & Mihandost, R. (2011). Entrepreneurial orientation and innovation performance: The mediating role of knowledge management. *Asian journal of business management*, 3(4), 310-316.
- Mady, K., Battour, M., Aboelmaged, M., & Abdelkareem, R. S. (2023). Linking internal environmental capabilities to sustainable competitive advantage in manufacturing SMEs: The mediating role of eco-innovation. *Journal of Cleaner Production*, 417, 137928.
- Mahlich, J., & Pascha, W. (2007). *Innovation and technology in Korea: Challenges of a newly advanced economy*. Springer Science & Business Media.
- Makhloufi, L., Laghouag, A. A., Ali Sahli, A., & Belaid, F. (2021). Impact of entrepreneurial orientation on innovation capability: The mediating role of absorptive capability and organizational learning capabilities. *Sustainability*, 13(10), 5399.
- Maldonado-Guzmán, G., Garza-Reyes, J. A., Pinzón-Castro, S. Y., & Kumar, V. (2019). Innovation capabilities and performance: are they truly linked in SMEs? *International Journal of Innovation Science*, 11(1), 48-62.
- Manu, F. A., & Sriram, V. (1996). Innovation, marketing strategy, environment, and performance. *Journal of Business Research*, 35(1), 79-91.
- Martínez-Román, J. A., Tamayo, J. A., Gamero, J., & Romero, J. E. (2015). Innovativeness and business performances in tourism SMEs. *Annals of Tourism Research*, 54, 118-135.
- Martínez, P. (2015). Customer loyalty: Exploring its antecedents from a green marketing perspective. *International Journal of Contemporary Hospitality Management*, 27(5), 896-917.

- Mention, A.-L., Barlatier, P.-J., & Josserand, E. (2019). Using social media to leverage and develop dynamic capabilities for innovation. *Technological Forecasting and Social Change*, 144, 242-250.
- Meske, C., & Stieglitz, S. (2013). Adoption and use of social media in small and medium-sized enterprises. Practice-Driven Research on Enterprise Transformation: 6th Working Conference, PRET 2013, Utrecht, The Netherlands, June 6, 2013. Proceedings 6,
- Moshood, T. D., Nawanir, G., Mahmud, F., Mohamad, F., Ahmad, M. H., AbdulGhani, A., & Kumar, S. (2022). Green product innovation: A means towards achieving global sustainable product within biodegradable plastic industry. *Journal of Cleaner Production*, 363, 132506.
- Moussa, T., Allam, A., Elbanna, S., & Bani-Mustafa, A. (2020). Can board environmental orientation improve US firms' carbon performance? The mediating role of carbon strategy. *Business Strategy and the Environment*, 29(1), 72-86.
- Muninger, M.-I., Hammedi, W., & Mahr, D. (2019). The value of social media for innovation: A capability perspective. *Journal of Business Research*, 95, 116-127.
- Ngamsutti, S., & Ussahawanitchakit, P. (2016). Marketing innovation capability and marketing performance: an empirical study of electrical and electronic appliances in Thailand. *The Business & Management Review*, 7(5), 339.
- Nidumolu, R., Prahalad, C. K., & Rangaswami, M. R. (2009). Why sustainability is now the key driver of innovation. *Harvard business review*, 87(9), 56-64.
- Nurjannah, N., YUNUS, M. H., Nurimansjah, R. A., & Erwina, E. (2024). Total Quality Management and Productivity Performance of SMEs: The Moderating Effect of Marketing Strategy. *Quality-Access to Success*, 25(199).
- Ooms, W., Bell, J., & Kok, R. A. (2015). Use of social media in inbound open innovation: Building capabilities for absorptive capacity. *Creativity and Innovation Management*, 24(1), 136-150.
- Ortiz-de-Mandojana, N., & Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. *Strategic Management Journal*, 37(8), 1615-1631.
- Ottman, J. (2017). *The new rules of green marketing: Strategies, tools, and inspiration for sustainable branding*. Routledge.
- Öztamur, D., & Karakadılar, İ. S. (2014). Exploring the role of social media for SMEs: as a new marketing strategy tool for the firm performance perspective. *Procedia-Social and Behavioral Sciences*, 150, 511-520.
- Papadas, K.-K., Avlonitis, G. J., Carrigan, M., & Piha, L. (2019). The interplay of strategic and internal green marketing orientation on competitive advantage. *Journal of Business Research*, 104, 632-643.
- Parveen, F., Jaafar, N. I., & Ainin, S. (2015). Social media usage and organizational performance: Reflections of Malaysian social media managers. *Telematics and informatics*, 32(1), 67-78.
- Parveen, F., Jaafar, N. I., & Ainin, S. (2016). Social media's impact on organizational performance and entrepreneurial orientation in organizations. *Management Decision*, 54(9), 2208-2234.
- Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: marketing influence on consumer purchase decision. *Journal of consumer marketing*, 25(5), 281-293.
- Pippo, G. (2018). *The effect of value-based pricing strategies on the innovation performance of small and medium enterprises* [University of Twente].
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Popovic, I., Bossink, B. A., & van Der Sijde, P. C. (2019). Factors influencing consumers' decision to purchase food in environmentally friendly packaging: What do we know and where do we go from here? *Sustainability*, 11(24), 7197.
- Puriwat, W., & Tripopsakul, S. (2021). Explaining an adoption and continuance intention to use contactless payment technologies: during the COVID-19 pandemic. *Emerging Science Journal*, 5(1), 85-95.

- Qalati, S. A., Yuan, L. W., Khan, M. A. S., & Anwar, F. (2021). A mediated model on the adoption of social media and SMEs' performance in developing countries. *Technology in Society*, 64, 101513.
- Rajapathirana, R. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3(1), 44-55.
- Raji, R. A., Rashid, S., & Ishak, S. (2019). The mediating effect of brand image on the relationships between social media advertising content, sales promotion content and behavioural intention. *Journal of Research in Interactive Marketing*, 13(3), 302-330.
- Ram, J., & Liu, S. (2018). Social media driven innovations: an exploratory study in China 1. *Journal of Innovation Economics & Management*(3), 123-146.
- Ribau, C. P., Moreira, A. C., & Raposo, M. (2017). SMEs innovation capabilities and export performance: an entrepreneurial orientation view. *Journal of Business Economics and Management*, 18(5), 920-934.
- Rodríguez-Espíndola, O., Cuevas-Romo, A., Chowdhury, S., Díaz-Acevedo, N., Albores, P., Despoudi, S., Malesios, C., & Dey, P. (2022). The role of circular economy principles and sustainable-oriented innovation to enhance social, economic and environmental performance: Evidence from Mexican SMEs. *International Journal of Production Economics*, 248, 108495.
- Rosita, J., Ihalauw, J., Abdi, A. S., & Sirine, H. (2023). The effect of entrepreneurial orientation and social media adoption on marketing performance of culinary start-up business. *Journal of System and Management Sciences*, 13(3), 29-51.
- Roxas, B., Ashill, N., & Chadee, D. (2017). Effects of entrepreneurial and environmental sustainability orientations on firm performance: A study of small businesses in the Philippines. *Journal of small business management*, 55, 163-178.
- Ruiz-Ortega, M. J., García-Villaverde, P. M., De La Gala-Velásquez, B., Hurtado-Palomino, A., & Arredondo-Salas, Á. Y. (2021). Innovation capability and pioneering orientation in Peru's cultural heritage tourism destinations: Conflicting environmental effects. *Journal of Hospitality and Tourism Management*, 48, 441-450.
- Sanz-Valle, R., Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Perez-Caballero, L. (2011). Linking organizational learning with technical innovation and organizational culture. *Journal of Knowledge Management*, 15(6), 997-1015.
- Saunila, M. (2020). Innovation capability in SMEs: A systematic review of the literature. *Journal of Innovation & Knowledge*, 5(4), 260-265.
- Savitri, C., Hurriyati, R., Wibowo, L., & Hendrayati, H. (2022). The role of social media marketing and brand image on smartphone purchase intention. *International Journal of Data and Network Science*, 6(1), 185-192.
- Shah, S. M.-u.-D. (2022). Relationship Between Strategic Orientation, Service Innovation and Its Impact on Market Performance. *iRASD Journal of Management*, 4(4), 602-611.
- Shin, S., & Damon Aiken, K. (2012). The mediating role of marketing capability: evidence from Korean companies. *Asia Pacific Journal of Marketing and Logistics*, 24(4), 658-677.
- Sutrisno, S., Kuraesin, A. D., Siminto, S., Irawansyah, I., & Ausat, A. M. A. (2023). The role of information technology in driving innovation and entrepreneurial business growth. *Jurnal Minfo Polgan*, 12(1), 586-597.
- Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018). Understanding the impact of social media usage among organizations. *Information & management*, 55(3), 308-321.
- Taleb, T. S., Hashim, N., & Zakaria, N. (2023). Mediating effect of innovation capability between entrepreneurial resources and micro business performance. *The Bottom Line*, 36(1), 77-100.
- Tidd, J. (2001). Innovation management in context: environment, organization and performance. *International Journal of Management Reviews*, 3(3), 169-183.
- Trainor, K. J., Andzulis, J. M., Rapp, A., & Agnihotri, R. (2014). Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM. *Journal of Business Research*, 67(6), 1201-1208.

- Tseng, C.-H., Chang, K.-H., & Chen, H.-W. (2019). Strategic orientation, environmental innovation capability, and environmental sustainability performance: The case of Taiwanese suppliers. *Sustainability*, 11(4), 1127.
- Tutar, H., Nart, S., & Bingöl, D. (2015). The effects of strategic orientations on innovation capabilities and market performance: The case of ASEM. *Procedia-Social and Behavioral Sciences*, 207, 709-719.
- Ujam, C. J. (2025). Adopting Manufacturing Flexibility to Achieve Competitive Advantage in a Global Economy.
- Urban, B., & Maphumulo, M. (2022). The moderating effects of entrepreneurial orientation on technological opportunism and innovation performance. *European Journal of Innovation Management*, 25(3), 901-921.
- Urgal, B., Quintas, M. A., & Tomé, R. (2011). Technological knowledge, innovation capability and innovative performance: the moderating role of the behavioural environment of the firm. *Cuadernos de Economía y Dirección de Empresas*, 14(1), 53-66.
- Wang, C. L., & Ahmed, P. K. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management*, 7(4), 303-313.
- Wang, Z., & Kim, H. G. (2017). Can social media marketing improve customer relationship capabilities and firm performance? Dynamic capability perspective. *Journal of Interactive marketing*, 39(1), 15-26.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Wu, Y., & Tham, J. (2023). The impact of environmental regulation, Environment, Social and Government Performance, and technological innovation on enterprise resilience under a green recovery. *Heliyon*, 9(10).
- Yadav, S. K., Tripathi, V., & Goel, G. (2019). Modelling strategic orientation dimensions and performance of small and medium enterprises: An application of interpretative structural modelling. *Journal of Modelling in Management*, 14(3), 754-772.
- Yasir, M., Majid, A., & Qudratullah, H. (2020). Promoting environmental performance in manufacturing industry of developing countries through environmental orientation and green business strategies. *Journal of Cleaner Production*, 275, 123003.
- Yeşil, S., Büyükbeşe, T., & Koska, A. (2013). Exploring the link between knowledge sharing enablers, innovation capability and innovation performance. *International Journal of Innovation Management*, 17(04), 1350018.
- Yeşil, S., Koska, A., & Büyükbeşe, T. (2013). Knowledge sharing process, innovation capability and innovation performance: An empirical study. *Procedia-Social and Behavioral Sciences*, 75, 217-225.
- Yun, J.-H. J., & Mohan, A. V. (2012). Exploring open innovation approaches adopted by small and medium firms in emerging/growth industries: case studies from Daegu–Gyeongbuk region of South Korea. *International Journal of Technology, Policy and Management*, 12(1), 1-19.
- Yun, J. J., Jeong, E., Zhao, X., Hahm, S. D., & Kim, K. (2019). Collective intelligence: An emerging world in open innovation. *Sustainability*, 11(16), 4495.
- Yun, J. J., Zhao, X., & Liu, Z. (2024). Regulation architecture of open innovation under digital transformation: Case study on telemedicine and for-profit-hospital. *Journal of open innovation: technology, market, and complexity*, 10(1), 100252.
- Yunita, S., Mahrinasari, M., Ahadiat, A., & Marselina, M. (2019). Model of improving tourism industry performance through innovation capability. *Journal of Environmental Management and Tourism*, 10(4), 853-864.
- YuSheng, K., & Ibrahim, M. (2020). Innovation capabilities, innovation types, and firm performance: evidence from the banking sector of Ghana. *Sage Open*, 10(2), 2158244020920892.
- Yusr, M. M. (2016). Innovation capability and its role in enhancing the relationship between TQM practices and innovation performance. *Journal of open innovation: technology, market, and complexity*, 2(1), 1-15.

- Yusr, M. M., Mokhtar, S. S. M., Perumal, S., & Salimon, M. G. (2022). The impact of customer knowledge management, TQM and marketing capabilities on product innovation performance of Malaysian SMEs: an empirical study. *International Journal of Innovation Science*, 14(2), 316-338.
- Zhao, T., Song, Z., & Li, T. (2018). Effect of innovation capacity, production capacity and vertical specialization on innovation performance in China's electronic manufacturing: Analysis from the supply and demand sides. *PloS one*, 13(7), e0200642.