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Environmental commitment and sustainable performance: A win-win approach

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Abstract:

This study seeks to explore the relationship between market orientation (MO), green entrepreneurial orientation (GEO), and environmental orientation (EO) on firm performance, with a focus on the mediating role of green supply chain management practices (GSCMP). Data were gathered from 318 respondents working in manufacturing sector of Pakistan i.e., automobile, food, textile, and chemical, production sectors. Structural equation modeling and partial least squared techniques are applied for analysis. Results revealed that GEO and EO has a significant positive impact on GSCMP which in turn impacts financial performance of the firm. Furthermore, this study offers empirical support for the GSCMP's mediating role in the relationship between GEO, EO, and the performance of the firms in the manufacturing sector. Results suggest that for achieving sustainable performance, firms must prioritize GSCMP in their operations. Managers of manufacturing companies can benefit from this study, as it highlights the critical role that GSCMP plays in the relationship between GEO, EO, and company's sustainable success. Furthermore, the results will assist managers in reaching sustainable performance targets by enabling them to make better strategic decisions. This creates a win-win situation for the company in particular and for the economy and world at large.

Keywords: Green entrepreneurial orientation, Environmental orientation, Green supply chain management practices, Firm performance

1. Introduction

Rapid industrialization and globalization over the past ten years have somehow increased financial performance but, it had a detrimental effect on the environment, causing problems including global warming, toxic chemical explosions, and contamination of the air and water (Habib, Bao, & Ilmudeen, 2020). Businesses are facing more pressure from stakeholders and the public to adopt an environmental position in the modern business world. Some stakeholders want businesses to preserve and safeguard green ecosystems. Governments are imposing more controls and restrictions over corporate operations. Similarly customers also demand more environmental friendly products (El-Garaihy, Badawi, Seddik, & Torky, 2022). Due to these pressures, businesses are becoming more conscious for the need to consider sustainability and environmental issues in their current production and economic operations (Rusyani, Lavuri, & Gunardi, 2021). Considering sustainability and environmental factors into account will not only help organizations to attain sustainable performance goals but it will also help them to set apart from competitors, to maintain their entrepreneurial spirit in a cutthroat market, and to maintain high standards of productivity and effectiveness (Cortes, Lee, Cortes, & Liñan, 2021).

Market orientation (MO) helps organizations to understand the wants and wishes of consumers and to determine what new products should be developed(Abbu & Gopalakrishna, 2021). However, the green entrepreneurial orientation (GEO) involves company to innovate, produce, and provide environmentally sustainable goods and services based on MO in order to maximize consumer value (Habib et al., 2020). Hence to attain sustainable performance goals these two must work side by side as consumers now a days not only need economic and innovative products but environmentally sustainable economic and innovative products(Wilburn Green, Toms, & Clark, 2015). However, adopting MO and GEO practices alone are not sufficient.

Stakeholder theory posit that firms to remain competitive must also include environmental orientation (EO) in their business model (Chavez, Malik, Ghaderi, & Yu, 2021). Furthermore, businesses should evaluate and enhance their suppliers' environmental performance in order to meet the demands of the general public, governmental organizations, and consumers. Thus the

environmental practices of an organization must also be differentiated by its green supply chain management practices (Agyapong, Aidoo, Acquaah, & Akomea, 2023; Eltayeb, Zailani, & Ramayah, 2011). GSCMP has the tendency to improve economic performance not only by lowering waste treatment costs, lowering environmental accidents, and saving energy with the help of reduced waste creation but, it also aids businesses in developing the capacity to handle stakeholder concerns while gaining a competitive edge to improve business performance (Habib et al., 2020; Zhou, Xia, Feng, Jiang, & He, 2020). Nevertheless, firms' environmental behavior is influenced by the specific context, as the key issues and the ways in which they respond can vary considerably between developed and developing countries (Seroka-Stolka & Fijorek, 2020; Wang, Li, & Qi, 2020). Emerging economies grapple with a range of economic, social, and environmental challenges that can hinder their overall development. (Saleem, Qureshi, & Malik, 2021). Tackling environmental challenges and issues could enable these emerging economies to achieve more integrated and inclusive growth. (Chatterjee & Mitra, 2017). Emerging economies, such as Pakistan, are highly vulnerable to climate conditions, necessitating urgent measures to lessen these impacts (Ahmad et al., 2021). The impact of a company's environmental commitment on its performance and competitiveness is a common topic in the field of environmental management (Elshaer et al., 2024). But, for many firms, the advantages of environmental projects remain obscure and unknown because decisions are often based solely on economic intuition. (Mao & Xu, 2024).

A business's commitment to environmental sustainability can improve its overall performance, but the underlying reasons and effects of this commitment are still not fully understood and need further investigation. The previous studies have explored the factors influencing environmental orientation (Saleem et al., 2021) and the impact of firm's environmental orientation on their strategic practices (Chan & Ma, 2021). However, there is limited understanding on how a firm's environmental commitment relates to its performance in the context of emerging economies. With the help of current study, researchers have tried to fill in the gap in the literature by proposing a link between firm's environmental commitment and sustainable performance with a mediating role of green supply chain management practices specifically in the context of emerging economies like Pakistan which are more vulnerable to climatic conditions. Therefore, this study focuses on

Pakistani manufacturing firms to examine how MO, GEO, and EO impact GSCMP, and how these practices subsequently affect firm performance.

The rest of this paper is organized as follows. The second section examines relevant prior research and formulates hypotheses. The third section outlines the methodology, while the fourth section presents the empirical results. The last section presents the conclusions and recommendations for future research.

2. Literature review

2.1. Market Orientation (MO)

Market orientation (MO) is referred as the capacity to recognize and meet the needs of clients (Bamfo & Kraa, 2019). However, Montiel-Campos (2018) explained MO as the cultural cornerstone that underpins an organization's process for gathering and applying market data. A company strategy known as "MO" places a high priority on determining the wants and needs of customers and developing goods and services to meet those demands. Similarly Herrero, San Martín, and Collado (2018) referred MO as getting, disseminating, and reacting to market information in order to provide clients with greater value. Previous research indicates that MO has three main dimensions: inter-functional coordination, competitor orientation, and consumer orientation (Liao, 2018). Whereas Montiel-Campos (2018) considers that the third dimension of MO is actually customer orientation of the organization.

2.2. Green Entrepreneurial Orientation

The tendency of a business to concentrate on opportunities that result in the introduction of environment friendly goods and services which benefit the company financially and environmentally is known as GEO (Fatoki, 2019). A concept that emerged from GEO is the combination of green entrepreneurship and entrepreneurial orientation. Combining two well-known ideas enterprise orientation and green entrepreneurship led to the development of the GEO (Peris, Supian, Hasanat, & Hossain, 2020). GEO is the tendency to grasp opportunities which result in the development of environmental friendly goods and services resultantly boosting the economy as well as the environment(Jiang, Chai, Shao, & Feng, 2018). The firm's decision-making actions

in terms of practices and adoption that set them apart from rivals is known as "green entrepreneurial orientation" (Montiel-Campos, 2018).

2.3. Environmental Orientation (EO)

The degree to which an organization incorporates ecological concerns into its business plan in an effort to lessen the negative consequences of its operations on the environment is known as its environmental orientation (Bu, Dang, Wang, & Liu, 2020). Organizational principles, ethical standards, and a dedication to environmental preservation can all be shown by an organization's environmental orientation (Gavronski, Klassen, Vachon, & do Nascimento, 2011). Empirical literature suggests that EO can be discussed in two perspectives i.e., internal and external environmental orientation (Zhou et al., 2020).

2.4 Market Orientation (MO) and Green Supply Chain Management Practices (GSCMP)

Market orientation is a rare and valuable resource of a company that makes distinctiveness and/or customer value delivery to boost competitive advantage, according to resource advantage theory (RAT) (Wilburn Green et al., 2015). According to the RAT theory, businesses can outperform competitors by precisely identifying market information and making wise management choices to transform their intangible assets into offerings for consumers. Consequently, one or more market groups would benefit from the creation of value (Frambach, Prabhu, & Verhallen, 2003).

Customers' increasing desire for eco-friendly products due to the growing concern over environmental issues has led to a substantial adoption of GSCM practices by MO (Choi, 2014). Using GSCM techniques, the MO manager makes use of the level of demand information and devises a plan to satisfy the owner as well as the consumer. A market-oriented approach speeds up firm's efforts to implement GSCM techniques. This allows them to fulfill client demand by producing their products within an ecologically responsible way (Wilburn Green et al., 2015). A powerful MO company puts the requirements and desires of the client first, studying the tactics of competitors and building firm capabilities like GSCMP to meet the needs of ecologically conscious consumers (Agyapong et al., 2023). Hence, we hypothesis that:

H1: Market orientation positively impacts green supply chain management practices.

2.5 Green Entrepreneurial Orientation and Supply Chain Management Practices

Three features of the dynamic capability view are the acts of sensing, seizing, and transforming. Teece, (2016) asserts that sensing capabilities are able to recognize, develop, and evaluate the technical prospects related to client needs. Capturing capabilities results in the creation of an action plan for the mobilization of resources to meet opportunities and existing demand. Transformative capabilities consistently keep an organization current by renewing its resources, enabling it to capture the highest market value (Ilmudeen, Bao, & Alharbi, 2019). The concept of green entrepreneurial orientation is linked to dynamic capacities and is supported by three sets of organizational processes: risk-taking and vulnerability, proactive action plans, and green innovativeness (Jiang et al., 2018).

Firms with GEO innovate, produce, and provide environmentally sustainable goods and services to maximize consumer value (Habib et al., 2020). While finding the link between GEO and GSCMP Altinay, Madanoglu, De Vita, Arasli, and Ekinci (2016) suggested that companies everywhere must respond to the needs of the era in order to set themselves apart from competitors, to maintain their entrepreneurial spirit in a cutthroat market, and to maintain high standards of productivity and effectiveness. Organizational strategic orientation, such as GEO, is a highly important intangible capability that enhances business performance by responding to and implementing strategic approaches, such as GSCMP (Cortes et al., 2021). When EO is applied with an environmental focus, businesses can encourage supply chain partners to work together more effectively, adopt sustainable supply practices that lessen the environmental impact of their goods, and acquire the resources and skills necessary to meet the demands of sustainable execution (Silva, Gomes, Carvalho, & Geraldes, 2021). A competitive edge can be earned when in an organization GEO prioritizes GSCM practices in the design and production of environmental friendly goods and services (Habib et al., 2020). Hence, we hypothesize that:

H2: Green entrepreneurial orientation positively impacts green supply chain management practices.

2.6 Environmental Orientation and Supply Chain Management Practices

In order for an organization to attain economic, environmental, and social performance, its environmental practices must be differentiated by its GSCM practices (Eltayeb et al., 2011). GSCM practices improve economic performance by lowering waste treatment costs, lowering environmental accidents, and saving energy (Habib et al., 2020). By creating eco-friendly products through green production, green marketing, and green research and development, GSCM techniques can reduce the overall environmental effect (Peng & Lin, 2008).

Resource dependence theory (RDT), postulates that companies might acquire crucial resources from their supply chain associates to facilitate the attainment of better company objectives(Lo, Zhang, Wang, & Zhao, 2018). In order to lessen their adverse environmental effects and meet corporate environmental objectives, businesses that implement EO are therefore motivated to work with supply chain partners (Zhou et al., 2020). Concerning the effect of environmental orientation on performance, GSCM functions as a mediating component (Laosillapacharoen & Karuhawanit, 2019). With the help of identifying, observing, and working together with suppliers, businesses can build their green capacity and acquire green resources (Bu et al., 2020). Which in turn helps businesses to successfully enlist the assistance of external stakeholders (Reche, Junior, Estorilio, & Rudek, 2020). Consequently, GSCMP may benefit from external environment (Bu et al., 2020). With lowering energy use and creating less pollution, GSCM improves environmental performance while also generating more economic advantages(El-Garaihy et al., 2022). Hence, we hypothesize that:

H3: Environmental orientation positively effects green supply chain management practices.

2.7 GSCMP and Firm Performance

GSCMP methods improve economic performance by lowering waste treatment costs, lowering environmental accidents, and saving energy (Habib et al., 2020). This improved economic performance is achieved based on customer collaboration and GSCM practices. Collaborating with customers and implementing GSM practices helps reduce water and energy consumption, lowers the emission of hazardous and toxic materials during production, and minimizes waste, effluents, air emissions, and environmental accidents (Geng, Mansouri, & Aktas, 2017) . Additionally, GSCM practices not only improves company economic performance but it also aids in improving worker and community health and safety while also improving the environment's performance

(Eltayeb et al., 2011; Wilburn Green et al., 2015). Improved environmental performance on the basis of GSCMP assists businesses in developing the capacity to handle stakeholder challenges while building a competitive edge to improve business performance (Gavronski et al., 2011). Since GSCM practices help businesses in reducing legal risks related to environmental violations, they improve the firm's ability to meet the needs of environmentally conscious clients and enhance its corporate image (Chan & Ma, 2021; Wilburn Green et al., 2015). However, businesses should look for and manage connections with green suppliers in order to develop safer and less expensive products, given the growing demand for green products and the growing environmental concerns of the government and society (Bu et al., 2020). The production of green products can be facilitated by sustainable materials that companies can obtain and secure with the help of such GSCMP (Albino, Balice, & Dangelico, 2009). Firms can also create distinctive capabilities in R&D, product development, and operational processes by working together and integrating with green suppliers (Green Jr, Zelbst, Meacham, & Bhadauria, 2012). Based on empirical literature it can be hypothesized that

H4: Green supply chain management practices positively impact firm performance

2.8 The Mediating Role of GSMP

In the era of open markets and globalization, there are thousands of competitors bringing a wide range of products to the market. However, only companies with the ability to meet customers' eco-friendly demands will survive. MO is extremely crucial due to fierce competition from around the world and shifting consumer demands. Thus, firms need to plan their operations with a strong emphasis on their markets if they hope to survive (Bamfo & Kraa, 2019). Firms that have MO are well positioned to strategically match their requirements and desires with those of their clients and other stakeholders. These are the firms that care about the company's broader social obligations (Bamfo & Kraa, 2019). Strongly market-oriented businesses will recognize the shift in consumer demand quickly and be among the first to launch environmental sustainability initiatives (Choi, 2014). Empirical literature suggests that there are two types of MO. One is driving the market and the other is driven by the market (Jaworski, Kohli, & Sahay, 2000). Our emphasis is on the market-driven version of MO, which argues that MO helps a business recognize and adapt to expanding customer which automatically give positive impact on firm performance (Abbu & Gopalakrishna,

2021; Bamfo & Kraa, 2019; Choi, 2014). MO and environmental friendly supply chain management practices work together to give the company a competitive edge that improves its financial success (Khan & Qianli, 2017). MO is strengthened by GSCM procedures, which also improve marketing advantages (Habib et al., 2020) by means of GSCM practice's long-term association resulting into enhanced firm performance. Considering empirical evidence, it can be hypothesized

H5: Green supply chain management practices mediate the relation between MO and firm performance.

Green Environmental Orientation (GEO) significantly boosts firm performance by simultaneously enhancing environmental, financial, and social outcomes (Fatoki, 2019; Jiang et al., 2018). Similarly A study on automotive parts industry by Muangmee, Dacko-Pikiewicz, Meekaewkunchorn, Kassakorn, and Khalid (2021) revealed that if a firm wants to achieve its goals in terms of social, economic, and environmental performance then GEO is particularly important. The empirical findings of Guo, Wang, and Chen (2020) further confirms that GEO possesses a beneficial impact on the performance of the firm. Findings suggest that GEO significantly improves MO and GSCM practices, which in turn improves sustainable company performance in all three of its dimensions (social, environmental, and economic). The notion of GEO has the potential to improve the environmental performance of firms. It does this by combining GEO with green practices and actions to reduce environmental deterioration in a number of ways for instance adoption of GSCMP (Peris et al., 2020). Empirical literature suggests that GEO is positively correlated with business performance and adaptable organizational culture (Habib et al., 2020; Jeong, Ali, Zacca, & Park, 2019; Muangmee et al., 2021). Hence, we hypothesize that:

H6: Green supply chain management practices mediate the relation between GEO and firm performance.

The industrial process generates a significant amount of environmental pollution, which over time deteriorates the ecological system (Habib et al., 2020). Stakeholder theory states that various societal actors anticipate businesses to make environmental protection commitments (Fang & Zhang, 2018). To address this pressure, firms can incorporate environmental concerns into their business strategy by considering both internal and external factors (de Oliveira, Espindola, da

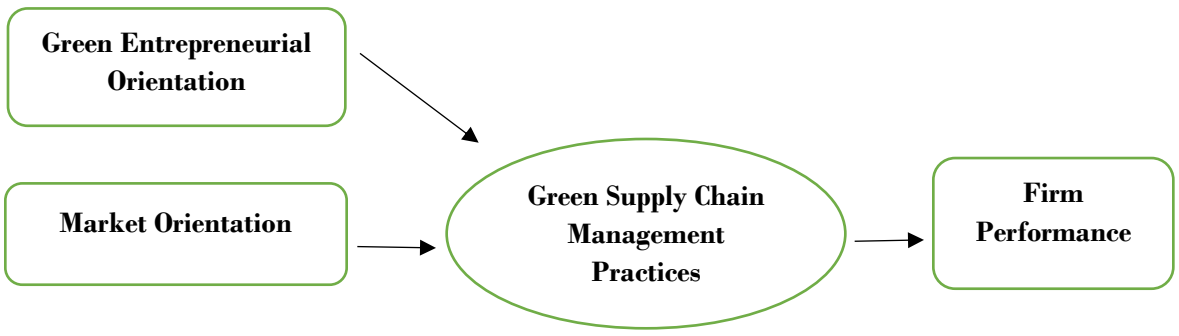
Silva, da Silva, & Rocha, 2018). These factors include that firms may look for and work with other vendors to find solutions for environmental problems. For instance, businesses can do environment friendly research and development, collaborate with suppliers to develop new environment friendly materials and components, or implement environment friendly management frameworks and policies (Al-Sheyadi, Muyldermans, & Kauppi, 2019). Additionally, by integrating environmental protection into their supply chain management, businesses can improve their green capabilities and establish a favorable green reputation (Badi & Murtagh, 2019). Moreover, businesses that establish positive relationships with their suppliers might acquire and develop strategic resources from those suppliers (Noh & Kim, 2019). Which in turn helps firms to develop and build green capability which helps firms produce more environmental friendly products to meet customers' expectations (Al-Sheyadi et al., 2019; de Oliveira et al., 2018). As a result, businesses will generate more performance and sell more green products (Fang & Zhang, 2018). Hence, we hypothesize that:

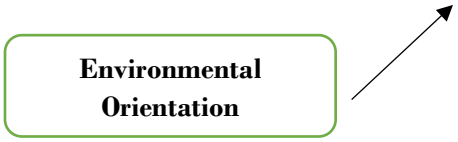
H7: Green supply chain management practices have mediating effect between EO and firm performance

2.9 Research framework

After reviewing existing literature, current study hypothesize that Green Supply Chain Management (GSCM) practices mediate the relationship between Green Entrepreneurial Orientation (GEO), Market Orientation (MO), Entrepreneurial Orientation (EO), and sustainable firm performance. Based on empirical literature following conceptual model is proposed

Figure 1. Conceptual model





3. Methods

3.1 Data collection and sample size

In the context of current study data was collected from food, textile, chemical and automotive manufacturing industries in Pakistan. Since they are major contributors to environmental harm by releasing hazardous and toxic wastes. The survey was conducted between January to April 2024. After eliminating invalid samples with missing data from the final survey, 318 valid questionnaires were gathered. The manufacturing company managers received the questionnaire by email, accompanied by a cover letter explaining the research objectives. Most of the participants are employed in marketing, operations, production, and supply chain management departments. Most of the respondents are managers, directors, executives, and senior executives, which likely ensures they have a good understanding of the questions. Reminder emails and follow-up calls were given to the responders three weeks later. In the first phase, 168 questionnaires were received; in the second phase, the remaining questionnaires were received.

3.2 Questionnaire and measurements

To test the research hypothesis, a survey research design was selected. All the theoretical constructs identified in the literature review were operationalized using established scales. Two sections comprised the questionnaire. The respondents' demographic data is presented in Part I, while questions about the various constructs are asked in Part II. Six items were selected for the Market Orientation dimension from Habib et al. (2020). For green Entrepreneurial Orientation five dimension was operationalized using scaled adopted from Jiang et al. (2018). To operationalize environmental orientation eight item scale was used from Bu et al. (2020), including four items for the internal and four items for external environmental orientations. Green supply chain management practices was measured using ten items adopted from Zhu, Sarkis, and Lai (2007). Four items scale by Bu et al. (2020) was used to measure the performance of the firm. This resulted in total of 33 items adopted in the final questionnaire, divided into five sections. We presented the questionnaire to the target respondents and gave them the choice of answering on a five-point likert

scale from one (strongly disagree) to five (strongly agree). In sum MO (CR = 0.858) was measured by fifteen items which were adapted from Habib et al. (2020). EO (CR = 0.876) was measured with four items previously used by Bu et al. (2020). GEO (CR=0.770) was measured by five items using Jiang et al. (2018) scale. GSCMP (CR=0.886) was calculated by ten items with the adaptation of Zhu et al. (2007) scale. Firm performance (CR = 0.732) was measured with the help of four items adopted from Bu et al. (2020).

3.3 Data Analysis method

Partial Least Squares Structural Equation Modeling (PLS-SEM) software was used. PLS-SEM was employed mainly because it is a suitable and commonly used piece of software for the exploratory investigation and verification of theory using empirical data (Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). Moreover, PLS provides useful tools for GSCM research because of its great degree of flexibility in terms of the linkages between data and theory(Vanalle, Ganga, Godinho Filho, & Lucato, 2017). Additionally, data can be comprehensively analyzed using the SEM approach, including the correlations between manifest variables within each latent variable and the relationships between latent variables themselves(Ilmudeen et al., 2019).

4. Results and discussion

4.1 Descriptive Statistics

Table 1 shows that most of the respondents work in the departments of operations, production, and supply chain. The table indicates that 72.9% were male and 27.04% were female, about 43.7% of respondents were employed in the automobile sector, followed by 3.14% in chemical sector, 52.5% in food industry, and 0.62% in the textile industry sector.

Around 29% of respondents hold an assistant management position, and 8.17% of respondents have more than 11–15 years of experience in the manufacturing business. Similarly, 44.9 percent of respondents have more than 6–10 years of experience in different industries, and roughly 30.5% of respondents hold a general manager position. The majority of our data was gathered by general managers with over 6 to 10 years of work experience.

[Insert Table 1: Demographic characteristics of the participants here].

4.2 Measurement Model

Discriminant validity, convergent validity, and concept reliability were all assessed as part of the measurement model evaluation (Habib et al., 2020). First, we evaluated the construct's Cronbach alpha and composite dependability to gauge its reliability. Results showed that the composite reliability of the first-order construct ranged between 0.732 and 0.886. Additionally, the Cronbach alpha values range from 0.732 to 0.884, which exceeds the 0.7 threshold. This suggests that the measurement model construct we used is valid and appropriate for the model (Hair Jr et al., 2014). Second, the convergent validity was evaluated using the average variance extracted (AVE) ("Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics," 1981). Every construct AVE value was discovered to be within the range of 0.50 to 0.58, which exceeds the critical values of >0.5, and it shows that our model's convergent validity is widely acknowledged (Hair, Risher, Sarstedt, & Ringle, 2019).

[Insert Table 2. Criteria for measuring model quality here]

Thirdly, discriminant validity is assessed using the cross-loading matrix and the Fornell-Larcker criterion. The cross-loading assessment involves checking of the outer loadings. If measurement items on a particular construct is greater than their loadings on any other constructs. Every measuring item in our study had a higher loading on its target construct, according to the cross-loading matrix data.

[Insert Table 3. Latent variable descriptive correlation and discriminant validity here]

Lastly, each construct's square root of AVE should be bigger than its highest correlation with any other construct when evaluating the Fornell-Larcker criterion. The study meets the Fornell-Larcker criterion as the square root of the AVE for the diagonal elements is higher than the off-diagonal correlations in the rows and columns. As a result, both the cross-loading analysis and the Fornell-Larcker criterion together confirm that the data meet the standards for discriminant validity.

4.3 Correlation of variables

Results of correlation analysis presented in Table 4 indicate that there exists a positive correlation among variables under study.

Table 4. Correlation matrix

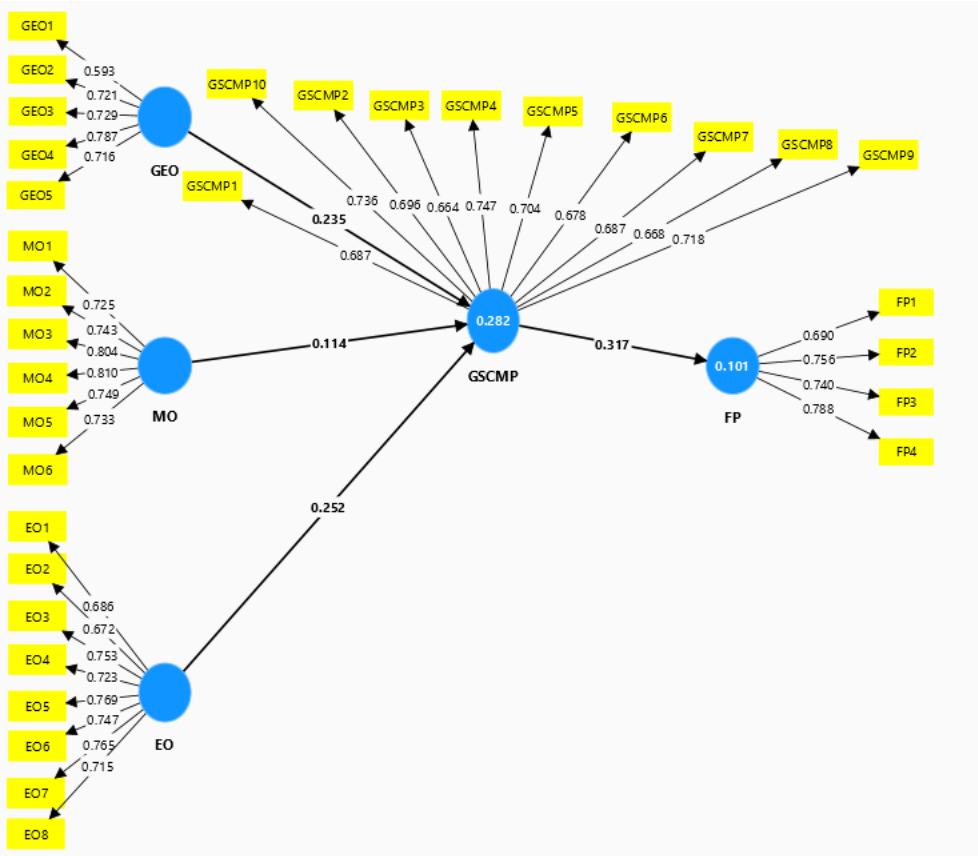
	EO	FP	GEO	GSCMP	MO
EO	1.00				
FP	0.288	1.00			
GEO	0.637	0.292	1.00		
GSCMP	0.475	0.317	0.476	1.00	
MO	0.645	0.291	0.710	0.443	1.00

4.4 Structural Model

Structural equation modeling (SEM), a sophisticated statistical technique that controls causal links between several variables within a single study framework, is used to evaluate hypotheses. When compared to multiple regression analysis, SEM has a number of advantages. SEM, for instance, handles both latent and observable variables. To enable control over mistakes, the causal links between variables in the same model are also addressed (dealing with numerous independent and dependent variables in a single model). Regression analysis, path analysis, and CFA are all combined in the SEM family of related statistical techniques. The outcomes of the structural model are shown in Figure 2.

The study framework's paths are reflected in the structural model, which is evaluated according to the R^2, Q^2 and paths' significance. The strength of the structural path, as indicated by the R^2 value for the dependent variable, determines how good the model is. The R^2 value greater than 0.1 indicates that the structural model is predictive. Additionally, the endogenous components' predictive relevance is established by standard deviation.

Figure 2. Structural Model



Results presented in table 5 indicate that there is direct or positive association between GEO and GSCM practices ($t = 2.666$, $\beta = 0.235$, $p < 0.008$), but with MO there is no significant direct or negative relationship with GSCMP ($t = 1.358$, $\beta = 0.114$, $p < 0.175$). H2 is therefore supported, whereas H1 is not. On the other hand, EO and GSCM have been discovered to have a substantial and direct association ($t = 3.173$, $\beta = 0.252$, $p < 0.002$). H3 is therefore also supported. Moreover, there is a significant and positive correlation between GSCMP and FP ($t = 5.585$, $\beta = 0.317$, $p < 0.000$). H4 is also supported. Hence it is concluded that more GSCM practices used, the better the long-term effects on the performance of the firm.

Insert Table 5. Results of bootstrapping for the assessment of structural models here]

4.5 Mediation analysis

This study also examined the mediation effect of GSCM procedures on the association between MO, GEO, and EO and the firm's performance. The direct path of the independent and mediating variable and the mediating and dependent variable is used to calculate the path coefficient, which

is a determinant of the mediating effect analysis. The mediating effect's importance was determined from the path coefficients obtained through bootstrapping, calculated according to the recommendations of (Hair Jr et al., 2014). The extent of the mediating effects has also been assessed using the variance accounted for (VAF).

The results in table 6 indicate a statistically significant positive indirect effect between GEO and FP (β=0.075, p=0.022), as well as EO and FP (β=0.080, p=0.014), with GSCMP acting as a mediator. Conversely, there is a positive effect between MO and FP (β=0.036, p=0.212) but not when GSCMP serves as a mediator. Hence results support hypotheses H6 and H7. However, H5 is not supported.

Insert Table 6. Summary of mediation results here]

4.6 Discussion

This study investigates the relation of MO, GEO and EO with firm performance along with the mediating role of GSMP.

Results indicates that the entrepreneur is driven by rivals toward environmental sustainability projects including green innovation, taking calculated risks while developing green projects, and acting ahead of their competition. GEO organizations are inherently motivated to prioritize sustainability, as seen by their green initiatives in operations, thinking, invention, and innovation, as well as in all supply chain activities that yield significant competitive benefits. The findings suggest that adopting an environmental strategy that centers on GSCMP might help businesses respond to external stakeholder demands (such as those from governments, communities, and customers) and potentially gain credibility, resources, and support. Businesses can enhance their green capabilities and cultivate a positive reputation among stakeholders by including environmental protection into their supply chain management. As a result, businesses can successfully enlist the assistance of external stakeholders. Firms' internal operations must rely heavily on external actions with suppliers in order to develop their green capabilities and provide green products for customers. When companies incorporate environmental considerations into their internal operations, they must actively seek out, monitor, and collaborate with eco-friendly suppliers to obtain the green materials and resources they require. Contextually findings of the

current study are quite logical as the Asian countries especially emerging countries like Pakistan are most at the verge of climate change. Increase in temperature which is alarming the survival and increase in public awareness is motivating the entrepreneurs to invest in GSCM practices which in turn enhance a company's social, environmental, and economic performance. The results of the study confirms the findings of (Badi & Murtagh, 2019; Bu et al., 2020; Habib et al., 2020; Reche et al., 2020).

5. Conclusions

5.1 Conclusion

This study makes an important contribution to the literature by presenting and testing a model that investigates the impact of market orientation, green entrepreneurial orientation, and environmental orientation with the GSCMP acting as a mediator for Pakistani manufacturing firm's performance. Results validate the favorable correlation between GSCMP and firm performance as well as that between environmental orientation, green entrepreneurial orientation, and GSCMP. The association between environmental orientation, green entrepreneurial orientation, and business performance further supports the favorable mediating role of GSCMP. The study's findings demonstrate that a proactive approach to business operations, a creative culture, and a willingness to take calculated risks in order to tackle new tasks related to establishing an ecological society through GSCM practices are the key components of a sustainable firm performance. As a result, this study adds to our understanding of the significance of environmental and green entrepreneurial orientation in the context of Asian emerging markets.

5.2 Theoretical Implications

This study contributes to the GEO, EO, and GSCMP literature in a number of ways. First, according to the dynamic capabilities concept, firm strategy and decision-making orientation, or GEO, is acknowledged as a dynamic capability. Thus, this study demonstrates how GEO and dynamic capability are intertwined in three contemporary processes and tasks: being willing to lead the way in green innovation, acting pro-actively to grab opportunities, and taking calculated risks with a fearless attitude to shift to an environmentally friendly economy. GSCM practices' mediating effect completes the gap in the relationship between GEO, EO and firm performance.

By correctly adhering to and applying GSCM processes inside their firm, the organizations can attain exceptional performance.

5.3 Practical Implications

The results of this study have the following applications. Innovation, proactivity, taking calculated risks, and spotting new opportunities are examples of entrepreneurial dynamic capabilities that drive corporate growth and value generation in organizations. The GEO company uses its dynamic ability to spot potential business opportunities. Dynamic skills support entrepreneurial policies and decision-making authority in delivering value to the market and carrying out eco-friendly operations like GSCM procedures to meet long-term objectives.

An environmentally conscious business must collaborate closely with its clients to apply GSCM strategies that will enhance both the company's sustainable performance and the state of the environment overall, creating a win-win scenario. Furthermore, the establishment of socially sound internal environmental policies can give the firm employing GEO and EO a competitive edge. Additionally, companies who adopt these approaches may maintain a close watch on the plans and activities of their rivals, and instead of relying solely on traditional competitive strategies, they may adopt proactive measures that will ultimately lead to lasting competitive benefits.

There are business managers' ramifications for this study as well. Public concern over environmental issues is growing in today's corporate sector. Businesses must take part in environmental preservation initiatives due to pressure from a variety of stakeholders. It is therefore advised that businesses incorporate environmental concerns into their strategic strategy. GSCM focused environmental initiatives assist businesses in obtaining funding and resources as well as efficiently handling stakeholder pressure. Additionally, businesses should incorporate the supply chain into their environmental strategy since GSCM enables them to create distinctive capabilities that boost performance and provide them a competitive edge. By concentrating on the environment, GSCM can enhance environmentally friendly production, fortify green R&D capacities, generate environmentally friendly goods that meet consumer needs, and promote sustainable competitiveness.

5.4 Limitations

Following limitations to this study may be noted for future research. Initially, the study's generalizability may be impeded by the fact that the data was gathered solely from one nation. Future research might look for a comparative analysis based on data collected from variety of industries or from other nations, such as China, India, Indonesia, Vietnam, or other Asian countries, etc.

Statements and Declarations

Availability of data and material

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Author’s Contribution

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