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Exploring the Relationship Between Green Innovation on Organizational Performance with Mediating Roles of Innovation Orientation at SME's Manufacturing Companies in Selangor: A Conceptual Paper

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ABSTRACT

This study explores the relationship between green innovation on organizational performance of Malaysian Small and Medium Enterprises (SMEs), particularly in Selangor. Green innovation is a method for resolving environmental concerns, promoting sustainability, and accelerating technological progress. It opens the path for a more sustainable and economically viable future. Besides, green innovation practices can assist organization in improving their performance by encouraging them to develop solutions that allow them to use less resources, reduce the likelihood of harm, and generate a carbon footprint within the firm. Previous research revealed that green innovation and organizational performance were positively related. However, these researches did not go further into the relationship between these constructs among manufacturing SMEs in Selangor. Therefore, the purpose of this study is to explore the green innovation on organizational performance among SMEs manufacturing companies in Selangor, Malaysia. This study conducted a purposive sampling survey of SMEs located in the Selangor, Malaysia. Self-administered questionnaires will be disseminated, and the data obtained will be analyzed using the partial least squares (SmartPLS) technique. The findings are expected to address the particular difficulties and possibilities that SMEs in Malaysia confront, which are critical to their long-term growth and competitiveness in both domestic and global markets. The research's personalized strategy attempts to improve these organizations' strategic capabilities by encouraging innovation, efficiency, and resilience. Therefore, developing a bespoke framework based on these insights could lead to more effective policies and support mechanisms, hence promoting Malaysia's economic progress and prosperity.

1. Introduction

The globe has provided great exposure to artificial resources with the development of technology and technological advancements, making life more leisurely. Artificial resource affluence, on the other hand, has come at the expense of sustainability and the environment. As a result, the globe has faced challenges in achieving a balance between sustainable resource use and economic development. Therefore, green innovation is critical in tackling environmental concerns and supporting long-term growth (Ahmed et al., 2023). According to Cillo et al. (2019), innovation is a key engine for corporate success, ensuring excellence and a competitive edge. It also improves environmental efficiency and helps build social capital for future development. Therefore, firms are advised to take a collaboration approach within their organizational ecosystems in order to efficiently deploy green innovation. Additionally, green innovation is a multifaceted strategy for addressing environmental concerns, fostering sustainability, and propelling technical advancement. It paves the way for a more environmentally conscious and economically viable future (Insights, 2024). On the other hand, green innovation can also be classified into green products and green processes that are intended to reduce energy and pollution emissions, use sustainable resources, and recycle trash (Sanni, 2018). Because of environmental concerns, consumer preferences, and governmental demands, green practices have become an important component of modern corporate operations.

Furthermore, the Malaysian government has recently insisted on the importance of nurturing human capital for the sake of economic growth. Introducing with new ways to create job opportunities, as well as exploring new strategies to help the business environment, is all part of the nurturing process (Gatere et al., 2015). For instance, Malaysia's green technology agenda that comprises of a number of projects and regulations aimed at increasing the usage of environmentally friendly approaches in all sectors in order to minimize reliance on fossil fuels and environmental effect. This goal will not only boost Malaysia's economy and social well-being, but will also drive service or system providers and enterprises to purchase green-certified assets. Malaysia is ranked 36th globally and eighth in SEAO (South East Asia, East Asia, and Oceania) by the 2023 Global Innovation Index (GII). Malaysia previously had a high GII score in 2013 and 2015. Furthermore, the GII score declined in 2022, but it still ranked 36th. However, it shows a rise in the GII score between 2013 and 2015, indicating that Malaysia is working hard to improve innovation to promote corporate success. Thus, innovation is an important aspect that must be considered in Malaysia, particularly among SMEs. This is because SMEs make up 98.5% of the Malaysian business community and are believed to be the most important contributor to the GII score.

On the other hand, green innovation is commonly seen as a means of assessing the general level of green commitment. Green innovation is significant in organizations because it protects the environment by reducing pollution, conserving energy, and recycling waste materials. Green practices can help businesses improve their performance by encouraging them to develop solutions that allow them to use less resources, reduce the risk of harm, and generate a carbon footprint (El-Kassar & Singh, 2019). Through green innovation, organizations attempt to eliminate pollution and its negative consequences on the environment (Wu and Gao, 2022). The green revolution is a one-of-a-kind strategy that enables businesses to create new strategies and systems to improve their performance (Ahmed et al., 2022; Wang and Song, 2014). Prior research has made significant contributions to the innovation literature; however, the narrow focus on innovations ignores an organization's proclivity to continuously innovate as an organizational goal, especially since Tushman (1997) states that innovations are not always the key to long-term business success. Instead, a firm's long-term performance may be determined by an overall firm-level innovation strategy that develops abilities that spark innovations rather than specific breakthroughs.

Research Problems and Objectives

SMEs have made substantial contributions to the Malaysian economy, although recent obstacles such as the COVID-19 pandemic in 2020 have hampered their growth (Department of Statistics Malaysia, 2020). The implementation of the Movement Control Order (MCO) has resulted in a decline in economic performance across all sectors as a result of COVID-19 measures. Furthermore, the Department of Statistics

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Malaysia indicated that the 7.3 percent drop in SMEs' GDP in 2020 is bigger than the 5.6 percent and 4.6 percent declines in Malaysian GDP and Non-SMEs GDP, respectively.

SMEs are key contributors in Malaysia's economy, accounting for 37.4% of GDP and 47.8% of employment in 2021. Collectively, they constitute a formidable economic force, and SMEs have the potential to make major contributions to the Sustainable Development Goals (SDG). Therefore, the Malaysian government has implemented development measures to support local SMEs and achieve its goal of becoming a high-income, developed nation by 2020. However, Malaysian SMEs still struggle to compete globally due to low productivity and performance (Tehseen, Sajilan, Ramayah and Gadar, 2015). Therefore, the purpose of this research is to determine the relationship between green innovation and organizational performance of SMEs manufacturing companies in Selangor, Malaysia.

Significance of Study

The study's development of a proven and verified conceptual model can be a useful tool for government organizations. This model provides a structured roadmap for implementing green innovation, covering key phases, considerations, and best practices. It can operate as a guide, making decision-making easier and promoting the adoption of sustainable practices inside organizations. The research technique used in this study can help companies identify the gap between their current practices and the best practices used by competitors or industry leaders. This understanding allows them to assess organizational performance and identify opportunities for improvement. Organizations can gain a competitive advantage in the global market by identifying gaps and adopting strategies to address them. Furthermore, the study's findings can serve as a strategic guideline for Malaysian organizations to align with global norms and practices, allowing them to better position themselves in the global economy. Lastly, this study aims to address a gap in the literature by laying the groundwork for future research on sustainable management in Malaysia, specifically green innovation among SMEs. This study will help to develop research models in the field of green innovation and organizational performance by giving valuable data on the relationships between the two.

2. Literature Review

Green innovation is linked to energy efficiency, the reduction of carbon and fossil fuel emissions, waste management, the development of renewable goods, and corporate environmental protection (R.R Ahmed et al., 2021, L. Yunzhao, 2022). Furthermore, green innovation refers to the development and implementation of new ideas, technologies, products, and processes that have a positive environmental impact. It aims to address important environmental concerns such as climate change, resource depletion, pollution, and biodiversity loss while promoting long-term economic growth. Green innovation can take numerous forms and occur in a wide range of socioeconomic sectors, including business, government, and academia. Chen et al. (2006) defined green innovation as physical and virtual innovation in hardware or software, through product and process improvement, taking into account technologies related to energy conservation, pollution prevention, waste recycling, eco-friendly product design, the use of ecological packaging, and corporate environmental management.

According to a recent study, green innovation is "the new or modified products and processes, including technological, managerial, and organizational innovations, that contribute to the sustainability of the surrounding environment" (Ilvitskaya and Prihodko, 2018). A study by Wang et al. (2020) found a positive and significant correlation between stakeholders' perceptions on green innovation initiatives. Furthermore, a significant connection has been shown between green innovation strategies and environmental and organizational performance. Furthermore, Syafri et al. (2021) found that Green Human Resource Management has a large positive impact on workplace green behaviour and firm performance, and workplace green behavior has a significant positive impact on green innovation and firm performance. In addition, green innovation has a large positive impact on business success.

On the other hand, organizational performance is one of the most commonly used dependent variables in contemporary organizational research, but it is also one of the most ill-defined. The rise of sustainability

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has prompted organizational leaders to examine the scope of green innovation strategies and their impact on long-term organizational performance (El-Kassar & Singh, 2017). Organizational performance is defined as a proportion of the difference in an association's state of issue or the total results produced by executives (Oyebanjo, 2011; Fussler & James, 1996). Organizational performance is a critical ward variable of interest for researchers studying nearly any aspect of the board. This broad framework is essential for analysts and directors to assess firms across time and compare them to competitors. Simply said, organizational performance is the most significant indicator for evaluating organizations, their activities, and challenges (Fussler & James, 2016).

According to Tseng et al. (2009), many businesses are realizing the importance of sustainable development and the deterioration of the global environment. However, applying it to a company's business activity is not as straightforward. As a result, firms must address these problems to ensure market survival and expansion. Additionally, organizational performance is associated with the principles of efficiency and effectiveness (Azzeh and Nuaimi, 2015). Organizations typically seek to complete tasks in a variety of ways. First and foremost, they want to do well financially, which means maximizing returns on investment and providing more than potential value to their production line. Second, in terms of market performance, they outperformed their competition. They might potentially earn the same or more money by offering a superior product at a higher price, allowing them to compete more effectively (Azzeh and Nuaimi, 2015).

Furthermore, innovation orientation is a strategic perspective that disrupts organizations' innovation processes and serves as a guiding principle for developing strategy and enacting policies to improve an organization's innovativeness (Chen et al., 2011; Stock and Zacharias, 2011). It defines a firm's "openness to new ideas, technologies, skills, resources, and administrative systems" (Zhou et al., 2005) and a knowledge-sharing system that integrates a learning perspective, strategic guidelines, and trans-functional acclimation within a firm to encourage innovation (Siguaw et al., 2006). Innovation orientation is a strategic perspective that disrupts organizations' innovation processes and serves as a guiding principle for developing strategy and enacting policies to improve an organization's innovativeness (Chen et al., 2011; Stock and Zacharias, 2011). It defines a firm's "openness to new ideas, technologies, skills, resources, and administrative systems" (Zhou et al., 2005) and a knowledge-sharing system that integrates a learning perspective, strategic guidelines, and trans-functional acclimation within a firm to encourage innovation (Siguaw et al., 2006). Innovation-oriented organizations, according to this definition, create key organizational competencies in resource allocation, technology, workers, operations, and markets (Siguaw, Simpson, & Enz, 2006).

Zehir, Altindag, and Acar (2011) discovered that both relationship and innovation orientations have statistically significant direct positive effects on business performance in their study The Effects of Relationship Orientation through Innovation Orientation on Firm Performance: An Empirical Study on Turkish Family-Owned Firms. On the other hand, there is no significant evidence to substantiate the effects of three sub-factors of connection orientations with subdimensionality on firm performance. The increase in the values of independent variables in innovation benefits the firm's performance. Furthermore, there is a clear relationship between innovation attitude and performance. Innovative forces are responsible for positive changes in efficiency, productivity, quality, competitive positioning, market share, and so on.

According to a review of the literature, various studies have been conducted to research innovation, with minimal emphasis on green innovation (Haila & Rundquist, 2011; Doran & Ryan, 2012; Ghetti & Rennings, 2014; Bossle, Dutra de Barcellos, Vieira, 2016; Trumpp & Guenther, 2017). Similarly, few studies on green innovation have been conducted mostly in developed economy, leaving a geographical void for green innovation research in developing economies such as Malaysia. Therefore, this study is conducted to fill this gap. Malaysia has attempted to modernize green business legislation, but it still lags behind other industrialized countries in terms of regulatory quality and environmental sustainability (Mohd Nor, 2022). The services industry's complex regulatory framework, involving multiple government departments, has made it challenging to navigate and streamline rules. Furthermore, industry players generally consider existing legislation and practices to be outdated or cumbersome (Mohd Nor, 2022). According to Ming-Horng and Chieh-Yu (2011), major corporations have more resources and infrastructure to implement green

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innovation, but SMEs may struggle. Due to a lack of resources and professionals, SMEs have more obstacles in implementing green innovation.

Although the impact of green innovation on organizational performance has not been extensively studied, it is probable that green innovation will have an impact on the organizational performance of SMEs in Malaysia. Many studies have been undertaken to assess the relationship between green innovation and organizational performance; however, few have used mediating variables to investigate the impact of the two relationships. However, the relationship between green innovations and organizational success remains unclear, demanding additional research into this field. To confirm whether or not the results differ from those obtained in this study, numerous variables that mediate the impacts of green innovation on organizational performance should be considered (Guzman, Reyes, and Castro, 2023).

3. Methodology

This study will use a quantitative method and will focus on SMEs in Selangor, Malaysia. This research will be undertaken as an explanatory study to determine the relationship between green innovation and organizational performance. The overall goal of this research is to examine the association between green innovation and organizational performance among Selangor's SMEs manufacturing companies. This study will be conducted using the survey technique, in which each respondent will be given a questionnaire and requested to complete the questions within a specific time frame.

The target population for this study is Small-Medium Enterprises (SMEs) manufacturing companies in Selangor, Malaysia. The respondent that will involve in answering the study is the head of director or the top management of the organization. Furthermore, the SMEs manufacturing organization must have been in operation for at least a year to assure the significance of the findings afterward.

A purposive sampling approach will be utilized. Data will be gathered via an online survey known as a "Google Form" and a paper-based questionnaire. The questionnaire will include a cover letter informing responders about the study's goal and objectives. Respondents to the online survey will receive the Google Form link to the questionnaire via email or WhatsApp. Furthermore, the paper-based questionnaire will be given directly to respondents from SMEs manufacturing enterprises in Selangor. For this study, the researcher uses G*power to determine the optimum sample size for data collection and analysis. The G*power application allows you to compute sample size and run a number of statistical tests. G*Power is a free software that calculates power for a wide range of statistical tests such as t-tests, F-tests, and chi-square tests. It can help us prevent both type I and type II errors. Because this study would use SEM-PLS as a data analysis tool, careful consideration was required in establishing the optimum sample size for this investigation. Hair et al. (1998) recommended a sample size of at least 100 observations in order to generate valid results.

The questionnaire's items will be arranged as a five-point likert scale divided into four sections. Section A was created to collect information on the respondents' demographic characteristics, such as gender, age, educational level, work experience, and department. Section B, on the other hand, contains statements that evaluate the independent variable, green innovation, which will be classified into three groups based on green innovation aspects. Besides, section C comprises the statements that will be utilized to compute the dependent variable, organizational performance. This part assesses the impact of the respondent's green innovation on organizational performance. These questions are intended to provide an in-depth insight of the study's sample. Furthermore, Section D evaluates the mediator variable, which is innovation orientation. The questionnaires will investigate the relationship between green innovation and organizational performance, as well as how it will influence innovation orientation. These questions are intended to assess the green innovation and performance impact of this component. The responses will be entered into Smart PLS. The responses will be entered into a Statistical Package for the Social Sciences (SPSS) spreadsheet. The data will be analyzed and described. SPSS Version 28 was used to perform a descriptive analysis of quantitative data from surveys, including frequency, percentage, mean, and standard deviation. Further, this study will use SEM-PLS for testing the relationship between independent variables

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and dependent variables of proposed model. In addition, further findings such as effect size (f2) and predictive relevance (Q2) will be determined.

4. Expected Contribution of the Study

This research makes several significant contributions to the academic literature, policy-making, and practical management of Small Medium Enterprises (SMEs) in Malaysia by exploring the relationship between green innovation and organizational performance. This study creates and examines a complete theoretical framework that combines green innovation methods with organizational performance indicators in the setting of Malaysian SMEs. This fills a gap in the existing literature, as most studies have concentrated on larger firms and developed countries. Besides, the study provides empirical evidence that green innovation improves organizational performance among Malaysian SMEs. It quantitatively shows how green practices can improve financial performance, operational efficiency, and competitiveness. By focusing on Malaysian SMEs, the study provides novel insights into how green innovation is perceived and implemented in developing economies. This contributes to a more comprehensive knowledge of regional differences in the adoption of sustainable practices.

Moreover, the findings underscore the need of supportive government policies that encourage SMEs to adopt green innovations. Policy frameworks that provide incentives, subsidies, and training programs might be recommended to help SMEs implement green projects. Furthermore, in terms of strategic planning, the study helps SMEs by identifying specific green innovations with a demonstrated track record of improving organizational performance. This includes advancements in energy efficiency, waste management, and sustainable product development. By encouraging SMEs to implement green innovations, the study helps to advance environmental sustainability initiatives. It stresses the role of small and medium-sized enterprises (SMEs) in lowering carbon footprints and encouraging environmentally friendly practices, so contributing to national and global sustainability goals. To summarize, this study contributes greatly to the understanding of the relationship between green innovation and organizational performance among Malaysian SMEs. It offers useful insights and actionable recommendations to academics, policymakers, practitioners, and society at large, promoting Malaysia's SME sector's sustainability and competitiveness.

5. Conclusion

This study makes numerous significant contributions to the literature on the impact of green innovation on organizational performance at SMEs manufacturing companies in Selangor, Malaysia. To far, only a few studies have looked into green innovation and organizational performance in Malaysian SMEs, particularly in Selangor. Sandberg and Aarikka-Stenroos (2014) define innovation barriers as obstacles that hinder a company's ability to innovate. According to Savignac's (2008) study of French manufacturing enterprises using the Community Innovation Survey (CIS) methodology, financial restrictions severely impact a company's ability to pursue innovative projects. Besides, perceived financial impediments have a considerable deterrent effect on R&D investment, as measured by the Dutch CIS (Tiwari et al.,2007). Moreover, as we approach the twenty-fourth century, the worldwide population is demanding more green products due to the rapid depletion of world resources and the increasing energy intensity of use. However, small and medium-sized firms (SMEs), particularly those in Malaysia, continue to lack expertise about environmental monitoring and improvement. For example, the integration of green innovation into SMEs' goods is still in its early stages. In addition, SMEs usually lack research and development (R&D), economies of scale, and the ability to change long-held operating methods. Many SMEs do not prioritize upgrading their employees' skills and knowledge, or they are unwilling to participate in government-sponsored training programs that are designed to do precisely that. Thus, this study will add to the green management literature by establishing a unique green management strategy that sets a firm apart from competitors. Top management's strategic aim plays a crucial role in leading a company's green management. Measuring diverse green innovation strategies and providing empirical evidence on their

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impact on organizational performance might inform future research. The findings are thought to have the potential to assist the government, academia, and practitioners in their efforts to understand and explain the aspects involved in applying green innovation to improve organizational performance. This study contributes to the literature on green innovation and core competencies by exploring how green innovation competencies might improve a firm's market share and competitive advantage.

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