

DRIVERS AND BARRIERS TO GREEN INVESTMENT: UNDERSTANDING THE FACTORS INFLUENCING MALAYSIAN SMES

Cheah Chee Keong¹

Kong Yin Mei²

Tan Kock Lim³

Wong Kok Yaw⁴

Ong Hock Siong⁵

Adam Arif Lee Aik Keang⁶

Nakesvari A/P Shanmugam⁷

¹ Universiti Tunku Abdul Rahman, Faculty of Business and Finance Kampar, Perak
(Email: cckeong@utar.edu.my)

²Universiti Tunku Abdul Rahman, Faculty of Business and Finance Kampar, Perak
(Email: kongym@utar.edu.my)

³ UOW Malaysia KDU Penang University College, Penang
(Email: kocklim.tan@kdupg.edu.my)

⁴Tunku Abdul Rahman University of Management and Technology, Faculty of Accountancy, Finance & Business
Kampar, Perak
(Email: kokyaw@tarc.edu.my)

⁵ Universiti Tunku Abdul Rahman, Faculty of Business and Finance Kampar, Perak
(Email: onghs@utar.edu.my)

⁶Universiti Tunku Abdul Rahman, Faculty of Business and Finance Kampar, Perak
(Email: leeak@utar.edu.my)

⁷ Tunku Abdul Rahman University of Management and Technology, Faculty of Accountancy, Finance & Business
Kampar, Perak
(Email: nakesvari@tarc.edu.my)

Article history

Received date : 21-9-2023
Revised date : 22-9-2023
Accepted date : 9-10-2024
Published date : 15-10-2024

To cite this document:

Cheah, C. K., Kong, Y. M., Tan, K. L., Wong, K. W., Ong, H. S., Adam Lee, A. K., & Nakesvari, A. (2024). Drivers and barriers to green investment: understanding the factors influencing Malaysian SMEs. *Journal of Islamic, Social, Economics and Development (JISED)*, 9 (67), 345 - 359.

Abstract: *Small and medium enterprises (SMEs) play a vital role in Malaysia's economy but have been relatively slow in adopting environmentally sustainable practices and investing in initiatives to reduce their environmental impact. This study aims to develop a comprehensive conceptual framework for understanding the multifaceted determinants influencing Malaysian SMEs' decisions to invest in environmental initiatives. Drawing from well-established theories, including institutional theory, stakeholder theory, and the resource-based view theory, an integrative conceptual model is proposed. The framework encompasses regulatory, economic, organizational, socio-psychological, and stakeholder factors that shape SMEs' environmental investment behaviour. Key determinants explored include regulatory pressures, access to capital, economic benefits, management awareness and commitment, organizational resources and capabilities, and consumer demands. The conceptual framework provides a holistic lens to analyse the complex interplay between these factors, informing evidence-based policymaking, targeted support mechanisms, and capacity-building initiatives. By addressing the identified*

determinants, stakeholders can foster an enabling environment that encourages and facilitates sustainable practices among Malaysian SMEs, contributing to the nation's environmental goals, economic resilience, and long-term prosperity. The study contributes to the body of knowledge in environmental economics, sustainable business practices, and SME management, serving as a foundation for future empirical research and refinement of theoretical frameworks.

Keywords: *Green Investment, sustainability, ESG, SMEs Malaysia*

Introduction

Small and medium enterprises (SMEs) are integral to Malaysia's economic infrastructure, playing a crucial role in contributing to the nation's Gross Domestic Product (GDP) and providing employment for a significant segment of the population (Krishnan, Rani, & Shinozaki, 2024). According to the National SME Development Council, SMEs in Malaysia are defined as enterprises with annual sales turnover not exceeding RM50 million or full-time employees not exceeding 200 workers. These businesses operate across various sectors, including manufacturing, services, and agriculture (SME Corp. Malaysia, 2020).

Despite their importance in stimulating economic growth, Malaysian SMEs face challenges in adopting sustainable practices, a necessity as Malaysia aims to fulfil its Sustainable Development Goals and mitigate climate change effects in line with the United Nations' 2030 Agenda for Sustainable Development (Isa, Sivapathy, & Kamarruddin, 2021; Mokbel Al Koliby, Abdullah, & Mohd Suki, 2024). The 2030 Agenda, adopted by all UN member states, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. It aims to promote inclusive and sustainable economic growth, employment, and decent work for all.

The environmental impact of Malaysian SMEs, particularly in terms of carbon emissions and waste production, has become increasingly prominent (Baah et al., 2021; MGTC, 2021). SMEs are responsible for a substantial portion of Malaysia's total greenhouse gas emissions, contributing significantly to environmental degradation (Alam, Du, Rahman, Yazdifar, & Abbasi, 2022; MGTC, 2021). Slow adoption of eco-friendly practices among SMEs can be attributed to financial limitations, insufficient awareness of environmental issues, and organizational inertia (Caldera, Desha, & Dawes, 2019; Ghazilla et al., 2015; Isa et al., 2021).

The need to confront these environmental challenges is pressing. Promoting sustainable practices and encouraging investments in green technologies are essential steps for Malaysia to achieve its environmental objectives and transition to a low-carbon economy. Without such initiatives, Malaysian SMEs risk losing competitive and economic viability as they face more stringent environmental regulations and shifting consumer preferences towards eco-friendly products and services, both locally and globally (Alam et al., 2022; Isa et al., 2021).

To tackle this critical issue, it is imperative to understand the factors influencing SMEs' decisions to invest in environmental sustainability. This research proposes to develop a comprehensive conceptual framework that integrates regulatory, economic, organizational, and socio-psychological determinants. This framework will provide a holistic understanding of the incentives and obstacles facing green investment among Malaysian SMEs. By combining various theoretical perspectives and empirical evidence, the framework aims to guide future empirical studies and inform policy decisions. Ultimately, these insights will assist

policymakers, industry associations, and SME owners in fostering an environment that supports and accelerates the adoption of sustainable business practices among Malaysian SMEs.

Problem Statement

The transition towards a sustainable, low-carbon economy is a global imperative, and small and medium enterprises (SMEs) play a pivotal role in this transformation. In Malaysia, SMEs contribute significantly to the nation's economic growth and employment, accounting for a substantial portion of the country's greenhouse gas emissions (Ghazilla et al., 2015; Isa et al., 2021; MGTC, 2021; Yadegaridehkordi, Foroughi, Iranmanesh, Nilashi, & Ghobakhloo, 2023). However, the adoption of sustainable practices and investment in green technologies among Malaysian SMEs remains sluggish, hindered by various challenges.

The lack of eco-friendly initiatives among SMEs can be attributed to multiple factors, including financial constraints, insufficient knowledge and awareness of environmental issues, and organizational inertia (Abdul-Rashid, Sakundarini, Ghazilla, & Thurasamy, 2017; OECD, 2022; Yadegaridehkordi et al., 2023). Many SME owners perceive green investments as costly endeavours with uncertain returns, deterring them from embracing sustainability practices (Fernando & Hor, 2017; Isa et al., 2021; MGTC, 2021). Additionally, the absence of robust regulatory frameworks and incentives further exacerbates the reluctance to adopt environmentally conscious business strategies (Fernando & Hor, 2017; Ghazilla et al., 2015; Yadegaridehkordi et al., 2023).

This problem is particularly concerning as Malaysian SMEs risk losing their competitive edge and market share due to increasing environmental regulations, shifting consumer preferences, and the growing demand for eco-friendly products and services (Fernando & Hor, 2017; Hina et al., 2024; Yadegaridehkordi et al., 2023). Failure to address this issue could have severe implications for the long-term sustainability and economic viability of these enterprises, as well as for Malaysia's progress towards achieving its Sustainable Development Goals and climate change mitigation targets (Isa et al., 2021; MGTC, 2021).

To effectively tackle this challenge, a comprehensive understanding of the drivers and barriers influencing green investment decisions among Malaysian SMEs is crucial. By identifying and examining the regulatory, economic, organizational, and socio-psychological factors that shape these decisions, policymakers and industry stakeholders can develop targeted strategies and interventions to accelerate the adoption of sustainable practices within the SME sector.

The conceptual framework will serve as a valuable tool for future empirical studies, enabling researchers to investigate the relative influence of various determinants and their interrelationships. Moreover, it will inform policymakers and industry associations on the most effective measures to foster an enabling environment that encourages and supports green investment among Malaysian SMEs. By addressing this critical issue, the research will contribute to the broader goal of promoting sustainable economic growth, environmental preservation, and the achievement of Malaysia's commitments under the United Nations' 2030 Agenda for Sustainable Development. Ultimately, this endeavour will pave the way for Malaysian SMEs to become catalysts for positive change, driving the nation's transition towards a greener and more sustainable future.

Literature Review

The conceptual framework for understanding the determinants of environmental investment in Malaysian SMEs is informed by a synthesis of well-established theories from various academic disciplines. These foundational theories elucidate the multifaceted influences on SMEs' decision-making processes and behaviours concerning environmental sustainability.

Institutional Theory

Institutional theory developed by DiMaggio and Powell (1983) and further refined by Scott (2008) posits that organizations are profoundly shaped by external pressures from regulatory frameworks, societal norms, and industry standards. Within the environmental investment sphere, Malaysian SMEs likely respond to government regulations, industry guidelines, and societal expectations regarding environmental stewardship (Baah et al., 2021; Caldera et al., 2019). This theory underscores the significance of coercive, normative, and mimetic pressures in melding organizational behaviour, highlighting how these forces can prompt SMEs to adopt sustainable practices.

Stakeholder Theory

Stakeholder theory articulated by Donaldson and Preston (1995) Freeman (2010) and elaborated by Freeman (2010) asserts that organizations must address the interests and expectations of diverse stakeholders—including customers, employees, suppliers, and the broader community—to maintain legitimacy and competitive advantage. For Malaysian SMEs, engaging in environmental initiatives might be driven by the demands of environmentally conscious consumers, investors, or local communities. This perspective underscores the strategic importance of stakeholder engagement in fostering an organization's environmental commitment (Baah et al., 2021; Ezuma, Matthew, Ezuma, & Matthew, 2022).

Resource-Based View (RBV)

The Resource-Based View, as described by Barney (1991) and Wernerfelt (1984), argues that a firm's competitive advantage is derived from its possession of valuable, rare, inimitable, and non-substitutable resources. In the realm of environmental investment, sustainable practices and technologies can be viewed as strategic assets that enhance an SME's competitiveness and sustainability, as noted by (Alam et al., 2022). This theory emphasizes the critical role of organizational resources and capabilities in the pursuit of environmental initiatives, suggesting that internal assets are pivotal in achieving sustainable outcomes (Alam et al., 2022; Baah et al., 2021).

The proposed conceptual framework integrates these diverse theoretical perspectives to offer a comprehensive analysis of the drivers and barriers to environmental investment for Malaysian SMEs. It recognizes the influence of external pressures and stakeholder expectations on organizational behaviours while also acknowledging the essential roles played by internal resources, capabilities, and individual decision-making factors. This holistic approach facilitates a deeper understanding of the complexities involved in SMEs' environmental strategies, providing a robust basis for further empirical investigation and policy formulation.

Regulatory Pressures

Regulatory pressures and government policies have been widely recognized as significant drivers for environmental investment and sustainable practices among businesses, including SMEs (Basit et al., 2024; Caldera et al., 2019). In the Malaysian context, various environmental regulations and initiatives have been introduced to promote eco-friendly practices and reduce the environmental impact of businesses. SMEs may be motivated to invest in environmental

initiatives to ensure compliance with these regulations and avoid potential legal and financial consequences (Baah et al., 2021; Karuppiah, Sankaranarayanan, Ali, Chowdhury, & Paul, 2020). Additionally, the perceived stringency and enforcement of these regulations can influence SMEs' decisions to adopt environmentally responsible practices (Dzikriansyah, Masudin, Zulfikarjah, Jihadi, & Jatmiko, 2023; Seth, Rehman, & Shrivastava, 2018).

The Malaysian government has implemented several environmental laws and policies to foster sustainable practices and ensure compliance across various sectors. Key initiatives include Solid Waste and Public Cleansing Management Act 2007, the Renewable Energy Act 2011, the National Green Technology Policy (NGTP) and the National Climate Change Policy (NCCP), which aim to integrate green technology and climate resilience into the national development strategy (Isa et al., 2021; MGTC, 2021). Furthermore, the development of a Draft National Climate Change Act is underway to provide a robust legal framework for managing climate change impacts effectively (MGTC, 2021). These regulations set stringent standards for emissions, waste management, and energy efficiency, with the potential for fines or legal penalties for non-compliance among SMEs (Isa et al., 2021; MGTC, 2021).

The Malaysian government has actively introduced a variety of initiatives and incentives to encourage sustainable practices among businesses and promote green growth. These include the Green Technology Financing Scheme (GTFS) 3.0, aimed at supporting the issuance of Sustainable and Responsible Investment (SRI) Sukuk and green bonds, and the Government Green Procurement (GGP) Guidelines 3.0, which establish criteria for environmentally friendly procurement practices. Additionally, the Low Carbon Mobility Blueprint (2021 – 2030) seeks to reduce carbon emissions by promoting electric vehicles and improving public transport. The MyHIJAU Mark & Directory further supports green practices by facilitating the sourcing and purchasing of green products. The National Energy Awards (NEA) and Energy Management Gold Standard (EMGS) Certifications recognize and encourage energy efficiency in businesses, while initiatives like the Low Carbon Cities 2030 Challenge (LCC2030C) and grants such as the Geran Pemangkin Bandar Rendah Karbon (GeRAK) support local authorities in implementing low carbon initiatives. These comprehensive measures are designed to integrate sustainability into the core of industrial activities, pushing the national agenda towards a greener future (Isa et al., 2021; MGTC, 2021).

Obtaining these certifications can provide SMEs with competitive advantages, access to new markets, and improved brand reputation (Baah et al., 2021). SMEs may be incentivized to invest in environmental initiatives to meet the requirements of these certification programs and differentiate their products or services in the market (Alam et al., 2022; Majumdar & Sinha, 2019). Furthermore, the government has implemented public procurement policies that prioritize products and services from businesses with green certifications, further incentivizing SMEs to adopt sustainable practices and obtain these certifications (Isa et al., 2021).

Access to Capital

Access to financial resources and capital is a critical determinant for SMEs to undertake environmental investments. Many SMEs face significant challenges in securing financing from traditional sources, such as banks and investors, due to perceived risks, lack of collateral, insufficient financial track records, or limited understanding of green technologies (Filippini, Leippold, & Wekhof, 2024; Ghazilla et al., 2015). The high upfront costs associated with adopting eco-friendly practices and technologies, coupled with the long payback periods, can deter SMEs from making such investments, especially when they face liquidity constraints or

have limited access to external funding (Majumdar & Sinha, 2019). This financial barrier is further exacerbated by the reluctance of some financial institutions to provide loans for environmental projects due to perceived risks and uncertainties (Caldera et al., 2019).

To overcome this obstacle, the availability of government incentives, subsidies, and green financing schemes can significantly influence SMEs' ability and willingness to invest in eco-friendly technologies and practices (Caldera et al., 2019; Karuppiah et al., 2020). Examples of such initiatives in Malaysia include the Green Technology Financing Scheme, the Green Technology Financing For Financial Institutions (GTFFI), and the Sustainable Energy Development Authority (SEDA) Feed-in Tariff (FiT) scheme (Isa et al., 2021; MGTC, 2021). These initiatives aim to provide financial assistance, tax incentives, or favourable loan terms to SMEs that invest in green technologies or adopt sustainable practices.

However, the effectiveness of these financial support mechanisms may be hindered by factors such as complex application processes, stringent eligibility criteria, or lack of awareness among SMEs (Majumdar & Sinha, 2019). Therefore, it is crucial to ensure that these schemes are accessible, well-publicized, and tailored to address the specific financial constraints faced by SMEs in different sectors and regions. Furthermore, innovative financing models, such as crowdfunding, green bonds, or private equity, could be explored to provide alternative sources of capital for SMEs pursuing environmental investments (Krishnan, Rani, & Shinozaki, 2024; MGTC, 2021; OECD, 2022). Capacity-building initiatives and advisory services can also assist SMEs in developing compelling business cases and enhancing their financial management skills to attract investors and secure funding for sustainable projects (Isa et al., 2021; Karuppiah et al., 2020).

Economic Benefits

SMEs often evaluate environmental investments based on a careful cost-benefit analysis, considering the potential costs, benefits, and payback periods involved (Gadenne et al., 2009; Revell et al., 2010). If the perceived costs outweigh the expected benefits or the payback period is deemed too long, SMEs may be reluctant to allocate limited resources towards environmental initiatives (Alam et al., 2022). Factors such as energy savings, waste reduction, operational efficiency gains, and improved resource utilization can contribute to the perceived benefits of environmental investments (Centobelli, Cerchione, & Singh, 2019). However, the upfront costs associated with adopting clean technologies, implementing sustainable practices, or obtaining environmental certifications can be a significant barrier, especially for resource-constrained SMEs (Centobelli et al., 2019).

Government incentives, tax rebates, and subsidies can play a crucial role in improving the financial viability and shortening the payback periods for such investments, making them more attractive to SMEs (Ghazilla et al., 2015; Seth et al., 2018). Additionally, the availability of reliable and accessible information, guidance, and advisory services on the financial implications of environmental investments can help SMEs make more informed decisions and better assess the potential returns on their investments (Baah et al., 2021; Karuppiah et al., 2020). Furthermore, SMEs may be more inclined to invest in environmental initiatives if they perceive tangible benefits and competitive advantages associated with such investments (Caldera et al., 2019). These perceived benefits can include cost savings from improved resource efficiency, enhanced reputation and brand image, access to new markets and customer segments, increased customer loyalty, and improved employee satisfaction and retention (Baah et al., 2021; Basit et al., 2024; Majumdar & Sinha, 2019).

However, it is important to note that the perceived costs and benefits of environmental investments may vary across different sectors, regions, and organizational contexts (Centobelli et al., 2019; Seth et al., 2018). For instance, SMEs in energy-intensive industries or those facing stricter environmental regulations may perceive greater benefits from investing in sustainable practices, while those in less resource-intensive sectors may prioritize other investment opportunities. To address these challenges, policymakers and industry associations can play a crucial role in raising awareness, providing tailored information and guidance, and facilitating knowledge-sharing among SMEs regarding the potential costs, benefits, and payback periods associated with environmental investments. This can help SMEs make more informed decisions and better assess the long-term financial viability and strategic advantages of adopting sustainable practices (Baah et al., 2021; Basit et al., 2024; Karuppiah et al., 2020).

Management Awareness, Knowledge, and Commitment

SME owners' and managers' level of awareness, knowledge, and understanding about environmental issues, impacts, and sustainable practices can significantly influence their willingness and motivation to invest in eco-friendly initiatives (Ghazilla et al., 2015; Majumdar & Sinha, 2019). A lack of awareness or limited knowledge about the environmental consequences of business operations, potential benefits of sustainable practices, or available green technologies can lead to inaction, scepticism, or resistance towards adopting environmentally responsible measures (Baz et al., 2022; Dzikriansyah et al., 2023; Fernando & Hor, 2017; Filippini et al., 2024).

In contrast, SME leaders who possess a strong understanding of environmental sustainability and its strategic importance for their businesses are more likely to prioritize and champion green investments (Mokbel Al Koliby et al., 2024; Seth et al., 2018). Their commitment and leadership play a critical role in driving environmental investment decisions, allocating necessary resources, and inspiring organizational change towards sustainability (Basit et al., 2024; Mokbel Al Koliby et al., 2024). Moreover, the presence of environmental champions or designated sustainability officers within the organization can be a powerful catalyst for promoting environmental awareness, identifying opportunities for improvement, and facilitating the implementation of environmental initiatives (Basit et al., 2024; Karuppiah et al., 2020). These individuals can serve as advocates, educators, and change agents, helping to overcome resistance and fostering a culture of environmental responsibility within the organization.

It is crucial to recognize that SME owners and managers may face challenges in acquiring and keeping up with the latest knowledge and best practices related to environmental sustainability, given their limited resources and multiple competing priorities (Basit et al., 2024; Caldera et al., 2019; Dzikriansyah et al., 2023). Therefore, providing accessible education, training programs, and capacity-building initiatives tailored to SMEs can be instrumental in enhancing their awareness, knowledge, and skills in this domain. Collaborative efforts involving government agencies, industry associations, and academic institutions can play a vital role in developing and delivering such educational resources and training programs (Centobelli et al., 2019; Filippini et al., 2024; Seth et al., 2018). Additionally, promoting success stories, case studies, and best practices from pioneering SMEs can serve as inspiration and motivation for others to follow suit. Furthermore, fostering a sense of environmental responsibility and stewardship among SME leaders through campaigns, awards, and recognition programs can

help cultivate a culture of sustainability and drive long-term commitment towards environmental investment (Baz et al., 2022; Isa et al., 2021).

Organizational Resources and Capabilities

SMEs often face significant resource constraints, including limited human capital, technical expertise, financial resources, and operational capacities. These constraints can hinder their ability to identify, evaluate, and effectively implement environmental initiatives, even when they recognize the potential benefits of such investments (Baah et al., 2021; Fernando & Hor, 2017).

Access to specialized knowledge, training programs, and technical assistance tailored for SMEs can help build their internal capabilities and enable them to navigate the complexities of environmental management, identify and pursue investment opportunities, and adopt sustainable practices (Baz et al., 2022; Centobelli et al., 2019). Collaboration with industry associations, research institutions, or larger organizations can also provide SMEs with access to valuable resources, knowledge-sharing opportunities, and best practices (Caldera et al., 2019; Majumdar & Sinha, 2019). Moreover, the availability of skilled human resources with expertise in environmental management, energy efficiency, waste reduction, or sustainable product design can be a crucial enabler for SMEs to successfully undertake environmental investments (Fernando & Hor, 2017). However, SMEs often face challenges in attracting and retaining talent with such specialized skills due to limited career advancement opportunities and resource constraints (Basit et al., 2024; Karuppiah et al., 2020).

Investing in employee training and professional development programs focused on environmental sustainability can help SMEs build internal capabilities and foster a culture of environmental responsibility (Basit et al., 2024). Additionally, leveraging external consultants, advisory services, or industry networks can provide SMEs with access to specialized expertise and guidance without the need for extensive internal resources (Basit et al., 2024; Majumdar & Sinha, 2019). Furthermore, the adoption of environmental management systems (EMS) and certifications, such as ISO 14000, can help SMEs streamline their operations, improve resource efficiency, and demonstrate their commitment to sustainability (Fernando & Hor, 2017). However, the implementation of EMS can be resource-intensive and may require external support or capacity-building initiatives tailored to the needs of SMEs.

To address these challenges, government agencies, industry associations, and academic institutions can play a crucial role in developing and delivering targeted training programs, knowledge-sharing platforms, and capacity-building initiatives to enhance SMEs' organizational resources and capabilities related to environmental sustainability (Dzikriansyah et al., 2023; Isa et al., 2021). Additionally, financial incentives, subsidies, or tax credits could be explored to encourage SMEs to invest in employee training, external consultancy services, or EMS implementation.

Consumer Demands and Market Opportunities

As environmental awareness and concerns among consumers continue to grow, SMEs may face increasing pressure to adopt sustainable practices and offer eco-friendly products or services (Dzikriansyah et al., 2023; Ghazilla et al., 2015). Failure to meet these evolving customer demands and preferences could result in a loss of market share, particularly in sectors where environmental consciousness is a key purchasing factor (Caldera et al., 2019; Majumdar & Sinha, 2019). Consumer demand for eco-friendly products and services is driven by various

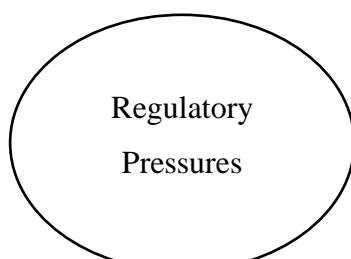
factors, including heightened awareness of environmental issues, personal values and ethical considerations, health concerns, and a desire to support sustainable businesses (Baah et al., 2021; Filippini et al., 2024; Majumdar & Sinha, 2019). This demand is further reinforced by growing regulatory pressures, media attention, and industry initiatives promoting sustainable consumption patterns.

SMEs that proactively invest in environmental initiatives and adopt sustainable practices may be better positioned to capitalize on these market opportunities and gain a competitive edge over their rivals (Seth et al., 2018). By offering environmentally friendly products or services, SMEs can differentiate themselves, appeal to environmentally conscious consumers, and potentially command premium prices (Karuppiyah et al., 2020). However, it is crucial for SMEs to accurately assess and understand the specific demands and preferences of their target customers, as these may vary across different market segments, geographic regions, and product categories (Baz et al., 2022; Isa et al., 2021). Conducting market research, monitoring consumer trends, and engaging with customers can provide valuable insights to guide SMEs' investment decisions and ensure alignment with evolving market demands.

Additionally, effective marketing and communication strategies are essential for SMEs to raise awareness about their sustainable practices and eco-friendly offerings, thereby attracting and retaining environmentally conscious customers (Dangelico, 2016; Brammer et al., 2012). This may involve eco-labelling, sustainability reporting, social media campaigns, or leveraging third-party certifications and endorsements. Industry associations and government agencies can play a supportive role by providing market intelligence, facilitating consumer education, and promoting sustainable consumption patterns (Isa et al., 2021; Majumdar & Sinha, 2019). Collaborative initiatives between SMEs, larger corporations, and non-governmental organizations can also help drive awareness and market demand for sustainable products and services (Baah et al., 2021; Basit et al., 2024; Shalhoob & Hussainey, 2022). By recognizing and responding to consumer demands for environmental sustainability, SMEs can not only mitigate potential risks but also unlock new market opportunities, enhance their brand reputation, and contribute to the broader societal goal of environmental protection.

Conceptual Frameworks

Drawing from the various theoretical perspectives and empirical findings in the literature, this research proposes a comprehensive conceptual framework that integrates the key determinants influencing Malaysian SMEs' decisions to invest in environmental initiatives. The framework aims to provide a holistic understanding of the complex interplay between regulatory, economic, organizational, socio-psychological, and stakeholder factors that shape SMEs' environmental investment behaviour.



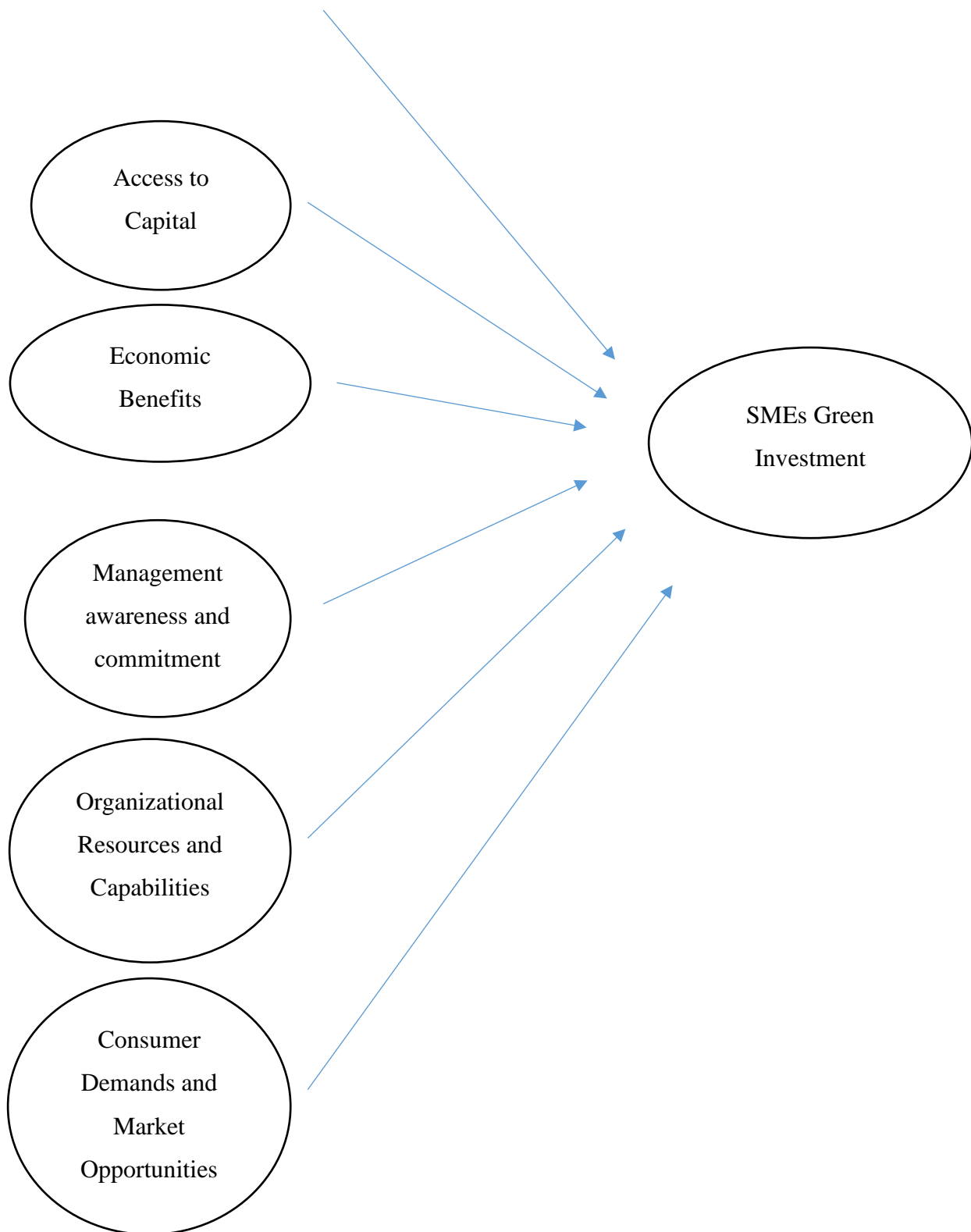


Diagram 1. Conceptual Framework of Drivers and Barriers to Green Investment

Significance of the Study

The proposed conceptual framework and research on the determinants of environmental investment for Malaysian SMEs hold significant implications for various stakeholders and contribute to advancing sustainable development efforts in the country. The study's findings will be valuable for policymakers, industry associations, SME owners, academic researchers, and the broader society.

Policymakers and Government Agencies

The insights derived from this study can inform evidence-based policymaking and the development of targeted strategies to promote environmental investments among Malaysian SMEs. By understanding the key drivers and barriers, policymakers can design effective regulations, incentive programs, and support mechanisms that address the specific needs and challenges faced by SMEs in different sectors and regions.

For instance, the findings may highlight the importance of providing financial incentives, technical assistance, or capacity-building programs to overcome resource constraints and knowledge gaps within SMEs. Additionally, the study can guide the development of awareness campaigns and educational initiatives to foster a more environmentally conscious mindset among SME owners and managers, addressing socio-psychological factors that influence decision-making.

Industry Associations and Non-Governmental Organizations (NGOs)

Industry associations and relevant NGOs can leverage the findings of this research to develop targeted strategies and programs that support and encourage sustainable practices among their member SMEs. By understanding the organizational, socio-psychological, and stakeholder determinants, these organizations can tailor their outreach efforts, training programs, and advocacy campaigns to address the specific needs and concerns of SMEs within their respective sectors.

Furthermore, the study can inform industry-wide initiatives and collaborations aimed at promoting environmental investments, such as supply chain partnerships, knowledge-sharing platforms, and best practice dissemination, fostering a more sustainable and competitive business ecosystem.

SME Owners and Managers

The conceptual framework and research findings can provide SME owners and managers with valuable insights into the drivers and barriers to environmental investment, enabling them to make more informed decisions. By understanding the regulatory landscape, economic considerations, organizational factors, and stakeholder expectations, SMEs can develop strategic plans and allocate resources effectively to implement sustainable practices and capitalize on emerging market opportunities.

Moreover, the study can raise awareness among SME decision-makers about the potential benefits and competitive advantages associated with environmental investments, such as cost savings, improved brand reputation, and access to new markets, encouraging a shift towards a more environmentally conscious and sustainable business mindset.

Academic Researchers and Scholars

The proposed conceptual framework and the findings of this study contribute to the existing body of knowledge in the fields of environmental economics, sustainable business practices, and SME management. The integrative approach and the comprehensive consideration of various determinants can serve as a foundation for further research and empirical investigations in different contexts, industry sectors, or geographical regions.

By providing a holistic understanding of the factors influencing environmental investment decisions among SMEs, this study can inspire future research exploring the interrelationships between different determinants, the relative importance of specific factors, or the development of intervention strategies tailored to specific SME segments or regions. Additionally, the study can inform the refinement and testing of existing theoretical frameworks related to organizational decision-making and sustainable practices.

Society and Environmental Sustainability

Ultimately, the significance of this study extends beyond its academic and practical implications for stakeholders directly involved in the SME sector. By contributing to the understanding of factors influencing environmental investments, this research has the potential to catalyse positive change and accelerate the adoption of sustainable practices among Malaysian SMEs. This, in turn, can contribute to the nation's environmental goals, economic resilience, and long-term prosperity, while also promoting a more sustainable and responsible business landscape that benefits society as a whole.

Conclusion

Small and medium enterprises (SMEs) are the backbone of Malaysia's economy, contributing significantly to the nation's GDP and employment opportunities. However, their collective environmental impact has been substantial, and many SMEs have been slow to adopt sustainable practices and invest in initiatives to reduce their carbon footprint and waste generation. This research aimed to develop a comprehensive conceptual framework that identifies and examines the multifaceted determinants influencing Malaysian SMEs' decisions to invest in environmental initiatives.

Through an extensive review of literature from various disciplines, this study proposed an integrative conceptual model that encompasses regulatory, economic, organizational, socio-psychological, and stakeholder factors. The framework recognizes the complex interplay between these determinants and their potential interactions, providing a holistic understanding of the drivers and barriers to environmental investment for Malaysian SMEs.

The proposed conceptual framework draws upon well-established theories, including institutional theory, stakeholder theory, the resource-based view, and organizational behaviour theories. By synthesizing these diverse theoretical perspectives, the study offers a comprehensive lens through which to analyse the complex decision-making processes underlying SMEs' environmental investment choices.

The findings of this research have significant implications for various stakeholders, including policymakers, industry associations, SME owners, academic researchers, and society at large. By identifying the critical determinants, this study offers valuable insights that can inform evidence-based policymaking, targeted strategies, and support mechanisms to foster a more enabling environment for sustainable business practices among Malaysian SMEs.

For instance, the study highlights the importance of providing financial incentives, technical assistance, and capacity-building programs to address resource constraints and knowledge gaps within SMEs. Moreover, it underscores the need for awareness campaigns and educational initiatives to foster an environmentally conscious mindset among SME owners and managers, addressing socio-psychological factors that influence decision-making.

Furthermore, the conceptual framework contributes to the existing body of knowledge and serves as a foundation for future empirical studies, enabling researchers to investigate the relative importance and interrelationships of these determinants in different industry sectors, geographical regions, or organizational contexts. Such research can inform the refinement and testing of existing theoretical frameworks related to organizational decision-making and sustainable practices.

As Malaysia strives to achieve its sustainable development goals and transition towards a low-carbon economy, encouraging and enabling SMEs to embrace environmental investments is crucial. Failure to adapt to increasingly stringent environmental regulations and changing consumer preferences for eco-friendly products and services could jeopardize the long-term competitiveness and profitability of Malaysian SMEs in both domestic and international markets.

By addressing the key determinants identified in this study and implementing targeted interventions, policymakers, industry associations, and SME owners can work together to accelerate the adoption of sustainable practices and contribute to the nation's environmental goals, economic resilience, and long-term prosperity.

Ultimately, this research represents a significant step towards promoting a more environmentally conscious and sustainable SME sector in Malaysia, aligning economic growth with environmental responsibility and ensuring a prosperous future for generations to come. Through collaborative efforts and a holistic approach that addresses the various determinants, Malaysia can pave the way for a more sustainable and responsible business landscape that benefits society, the environment, and the economy as a whole.

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