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## The Impact of Green Finance Initiatives on SME: A Systematic Literature Review

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### Abstract

Amidst the growing global environmental concerns such as climate change, resource depletion, and pollution—sustainable business practices have become increasingly crucial. One strategic approach to gain traction in the financial sector for supporting sustainability goals is green finance. This financial instrument not only aims to channel capital towards environmentally friendly projects but also holds significant potential to support the development of SMEs. SMEs play a vital role in the economic structure, particularly in developing countries, due to their contributions to economic growth, job creation, innovation, and market expansion. This study aims to review academic publications that examine the implementation of green finance within the SME sector and to systematically summarize existing findings to answer two key questions: the importance of implementing green finance in SMEs, and their impacts on SME development. Using the systematic literature review method, this study analyzes findings from various relevant articles to provide a comprehensive and structured understanding of the relationship between green finance, SME development, and sustainability. The findings in this study indicate that green finance implementation on SME yields positive effects on sustainability and SMEs development. This paper also uncovers some factors that encourage green finance implementation and constraints that SMEs face when implementing them.

### Keywords

Green Finance, SMEs, Systematic Literature Review, SME Development

## 1. Introduction

Environmental challenges have become one of the factors to focus on when it comes to economic and social development. Global awareness towards it has influenced a concept for sustainability such as green finance. This approach towards how SMEs adopt these financial strategies supports economic expansions and enhances ecological sustainability (Rahat & Nguyen, 2023; Roy, 2023). Green Finance applications for SMEs have had significant impact towards supporting sustainability itself, but the impacts towards how effective SMEs operate and result of using these methods is something that is also needed to be studied.

SMEs play an important role in economic and social development (Appiah-Kubi et al., 2024a). SMEs have contributed more than 50% of jobs across the globe and 40% of national income (GDP) in developing countries. In Indonesia alone, SMEs contributed 97% of total employment and 60% of GDP. SMEs also play a role as a major source of innovation for its countries, while also expanding market access and inclusivity. Kasper Flyger Regenburt, a postdoc researcher from CBS, said that reports indicate that SMEs accounts for 37-70% of corporate pollution, and across 15 OECD countries—where SMEs represents 99% of all firms—it collectively account for 40% of commercial waste, industrial pollution, and greenhouse gas emissions. This proves that the importance of SMEs is not only for economic health, but also for achieving sustainable and inclusive economic development.

Sustainable financing practices have been starting to be implemented to several SMEs and it has been explored since it was made aware. The adaptation comes in the form of sustainable approaches towards financing processes of the enterprise such as green loans, green investment, and ESG compliant corporate operation (Dzikri & Lazuardi, 2024). Green Finance, Financial Technology, and various Environmental Policies as factors to support this concept have been researched previously influencing the sustainable approach to develop an environmentally friendly and sustainable world (Udeagha & Muchapondwa, 2023). Implementing these into SMEs financial strategies and operations will surely support the growth of the country's economy.

While these practices were encouraged to be implemented, it was proven to be difficult as many SMEs faced many challenges while trying to (Musa & Chinniah, 2016; Muzamwese, 2016). One of the problems is the cost to implement it, and not many SMEs have the luxury to have access towards the finance level needed to start the green initiative. The commitment to apply the sustainable way of financing also was perceived to have a high risk, and the lack of awareness of sustainable finance options made it difficult for SMEs to start.

The purpose of this study is to thoroughly explore recent research of Green Financing to see how it impacted SMEs performances and everything else affected with the implementation. This topic has only been starting to gain awareness, and the number of research that has been done about this specific topic is low compared to other sustainability research topics. Even though there were insights, there remains a lack of comprehensive understanding regarding this topic across different contexts. This study will focus on examining and evaluating every research with relevant syntax, breakdown the papers from the methodology and the results, and conclude what has been found in recent years about the topic and what gap is found for future research.

## 2. Literature Review

Green Finance links greatly with environmental sustainability. Green finance plays a crucial role in promoting environmental sustainability by channeling investments into clean technologies, supporting eco-friendly businesses, and

facilitating a sustainable economy (Lagoarde-Segot, 2019; Zhang et al., 2022). Examples of Green Finance applications are green bonds, green credit, green loans, sustainable agriculture microfinance, and green deal and SME support. At its core, Green Finance focuses on financing initiatives and innovations that support environmental wellbeing, while minimizing the ecological harm often associated with traditional economic activities (Zhou & Li, 2022). Activities such as Green Financial Investments have been instrumental in reducing both energy consumption and carbon emissions. These investments contributed to a measurable reduction in environmental degradation (Zhang et al., 2021; Yu et al., 2022; Liu et al., 2021).

As previously stated, SMEs are the backbone of the country. Implementing sustainability operations in many SMEs would have a positive impact on a giant scale towards the environment. Because of this, SMEs are significantly encouraged to succeed in the market and need to willingly take risks and act even with limited resources. Company size matters when promoting sustainability. It's important to show the advantages of implementing it to motivate other SMEs to follow (Chang et al., 2022). Green and Sustainable finance provides SMEs to invest in sustainable practices. It can also enhance productivity, competitiveness, and profitability performance (Apostolopoulos et al., 2018; Kurniawan et al., 2023; Syed et al., 2022).

Another thing that would encourage SMEs to implement green financing is by allocating funds for sustainable practices to face the challenges of resource constraint (Oyewole et al., 2024; Liu et al., 2021). The benefits of green financing that has been found by recent research would help the SMEs to have a competitive advantage and influence other businesses to implement it as well (Suprianto et al., 2024). These allocations known as green funds can help SMEs to start committing on sustainability operations and enhance the environmental performance of the firm (Dzomonda, 2022).

### **3. Methods**

This study utilized a systematic literature review method to explore previous articles and publications about the implementations of green finance within the SMEs sector. The aim is to analyze the importance of green finance implementation on SME business operations and its impact on SMEs development. We have chosen to use the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) protocol to ensure that our review process is done in a rigorous and transparent way (Page et al., 2021), providing a comprehensive and meaningful result.

The first step in this study is to identify the scope and focus of this study, this is done by identifying and strategically applying the keywords to the databases. The databases we used in this study are ScienceDirect, Scopus, and Emerald Insight. We apply the following syntax to the search field of the databases, ("green finance" OR "sustainable finance" OR "climate finance" OR "environmental finance") AND sme'. Afterwards, we used the filter tools on the database to limit the scope of the articles. These criterias were applied to ensure that the articles provided by the databases are relevant to the theme of this research and reflects the latest trends in the industry. We then review the abstract of the articles and publications to further determine their relevance to this study. Finally the selected articles were read thoroughly and subsequently analyzed to then be constructed into a detailed narrative, with the aim to provide a comprehensive and structured understanding of the relationship between green finance, SME development, and sustainability.

4. Results

**Table 1.** PRISMA Flow Diagram Stages

Level	Information
Identification	Keywords were identified and strategically applied to accurately represent the objects of this study, namely green finance and small and medium-sized enterprise or SME. The keywords used for the construction of this study are as follows: “green finance”; “sustainable finance”; “climate finance”; “environmental finance”; and “SME”. (n = 964) ScienceDirect (n = 698) Scopus (n = 15) Emerald Insight (n = 251)
Screening	The following criterias were used to limit the scope of articles and publications reviewed in this study: 1. Articles that are published between 2020 to 2025 2. Articles that are written in English 3. Articles with a Green Finance theme 4. Articles with SME as the research subject 5. Articles are within the Economics Field (n = 528) ScienceDirect (n = 288) Scopus (n = 9) Emerald Insight (n = 231)
Eligibility	The abstracts of these articles and publications are then reviewed to determine their relevance to the research themes. (n = 21)
Inclusion	The selected articles were then read thoroughly and subsequently analyzed for further development in this study. (n = 11)

Table 1 illustrates the detailed process of each stage carried out in this systematic literature review. A total of 964 articles were obtained in the identification process, it was then narrowed down to almost half in the screening stage to 528 articles. At the eligibility process, the number of articles became 21, and finally after a thorough read of each article we managed to obtain 11 articles that are relevant to the theme of this study.

The results of the articles that have been reviewed are presented in Table 2 as follows:

**Table 2.** Article analysis of the impact of green finance initiative on SMEs

Author(s)	Title (Shortened)	Method	Result
Khababa and Jalingo (2023)	Green Finance, Investment & Tech on SMEs	Quantitative (250 SME employees, Saudi Arabia)	Green finance positively affects sustainability, partially mediated by CSR.
Appiah-Kubi et al. (2024b)	Green Financing & Sustainability Reporting	Quantitative (352 SMEs, Ghana)	Green financing improves sustainability reporting; pro-environmental behavior partially mediates; digitization moderates positively.

Author(s)	Title (Shortened)	Method	Result
Kato et al. (2024)	Sustainable Finance and SME Growth	Quantitative (2015–2023, PVC firms)	Access to sustainable finance boosts SME productivity and growth.
Hakam and Hakam (2024)	SLR on SME Sustainable Financing	Systematic Review (766 papers, 1989–2023)	Increasing prioritization of sustainable funding in developing countries, despite financial and infrastructure challenges.
Luo and Ma (2023)	Environmental Policy & SME Innovation	Quantitative (2015–2017, China SMEs)	Environmental policy significantly enhances eco-innovation and competitiveness.
Aristei et al. (2024)	Ethical Intermediaries & Green Investment	Quantitative (1998 micro-firms)	Financial literacy and digital financial skills indirectly increase green investment preference.
Jiang et al. (2025)	AI-based Green Finance & Emissions	Quantitative (2015–2022, NEEQ-listed SMEs)	AI-driven green finance tools promote green innovation and improve financial efficiency.
Putri et al. (2025)	Green Growth in SMEs: Global Trends	Systematic Review (56 articles, 2010–2024)	Bank Indonesia supports SMEs' green transition via LTV, FTV, and green loans.
Bouchmel et al. (2024)	Green Investment in Eastern Europe	Quantitative (10,410 SMEs, 24 countries)	Internal financing supports green investment; external financing barriers remain.
Owen (2023)	UK Gov't VC Funds & Low-Carbon SMEs	Qualitative (Lit review + 100 interviews)	Government VC funds aid SME cleantech; issues include low awareness, uneven fund access, and misaligned policies.
Schäfer et al. (2024)	Public Procurement & Innovation Barriers	Quantitative (European CIS data)	Participation in public tenders increases SMEs' financial constraints on innovation.

From the articles that have been reviewed, several distinct categories emerge: the impact green finance has on SMEs, the factors encouraging the use of green finance, and the constraint of implementing green finance.

**Table 3.** Article categories based on their relation to green finance and SMEs

Categories	Information
Impact of Green Finance on SMEs	(Appiah-Kubi et al., 2024b; Hakam & Hakam, 2024; Jiang et al., 2025; Kato et al., 2024; Khababa & Jalingo, 2023; Luo & Ma, 2023; Owen, 2023)
Factors Encouraging Green Finance Usage	(Aristei et al., 2024; Bouchmel et al., 2024; Luo & Ma, 2023; Owen, 2023; Putri et al., 2025)
Constraints in Implementing Green Finance	(Bouchmel et al., 2024; Owen, 2023; Schäfer et al., 2024)

#### 4.1. Impact of Green Finance on SMEs

Across several studies, it has been found that green finance has a mainly positive impact on SMEs and sustainability. A study by Khababa & Jalingo (2023) in Saudi

Arabia and Owen (2023) in the U.K., shows that green finance has a positive and significant impact on global sustainability such as low-carbon reduction. In Ghana, there is evidence that green finance supports sustainable reporting (Appiah-Kubi et al., 2024b). Several studies also find that increasing SMEs' access to green finance promotes economic growth in countries and enhances SMEs' productivity and growth potential (Hakam & Hakam, 2024; Kato et al., 2024). Finally when implementing green finance on SMEs in China and the U.K. there is evidence that green finance enhances SMEs performance and innovation capabilities, especially to provide eco-friendly products that in turn improves their competitiveness, gain access to new markets, and strengthen their reputation among investors and customers (Jiang et al., 2025; Luo & Ma, 2023; Owen, 2023). The study by Jiang et al. (2025) also mentioned the fact that green innovation in SMEs is being promoted by digital finance—through the usage of AI-driven green finance tools to improve their financing activities and also optimizing their resource allocation.

#### **4.2. Factors Encouraging Green Finance Usage**

There are several factors that encourage the use of green finance, some even differ between countries. A study by Aristei et al. (2024) discovered that financial literacy and digital financial ability enhances SMEs preference for green investment activities and sustainable investment decisions, although digital financial ability only affects it in an indirect way. In some countries like China, Indonesia, and the U.K.—government incentives, funds, and policies play a significant role in encouraging green finance implementation and green transformation in SMEs (Luo & Ma, 2023; Owen, 2023; Putri et al., 2025). In Eastern European countries internal finance has a more pronounced impact on green investments, this is since SMEs in those regions mostly rely on internal resources to finance their green investments activities (Bouchmel et al., 2024).

#### **4.3. Constraints in Implementing Green Finance**

Several factors also impede the implementation of green finance in SMEs. In European countries, SMEs face financial constraints from external sponsors (mainly from banks) and public procurements (Bouchmel et al., 2024; Schäfer et al., 2024). A study by Owen (2023) indicates that limited awareness of government-backed funds, uneven distribution of said funds or other green financial resources, and incoherent government policies and incentives also contributes to the difficulties SMEs experience when implementing green finance and green investments activities.

### **5. Discussion**

Green finance is the act of channeling investments into clean technologies, eco-friendly business, and sustainable economy (Lagoarde-Segot, 2019; Zhang et al., 2022). SMEs on the other hand, although its role in economic and social development are not at all questionable, it also accounts for 37-70% of corporate pollution. It is not at all surprising to find evidence of its implementation on SMEs in several nations (Mutianto, 2024). Some publications already noted the positive effect green finance has on global sustainability, sustainable reporting, economic growth—and on SMEs productivity, growth potential, performance, and innovation capabilities (Appiah-Kubi et al., 2024b; Hakam & Hakam, 2024; Jiang et al., 2025; Kato et al., 2024; Khababa & Jalingo, 2023; Luo & Ma, 2023; Owen, 2023). This, in turn enhances SMEs competitiveness, enables them to gain access to new markets, and strengthen their reputation among customers and investors (Luo & Ma, 2023). Additionally, the usage of digital finance innovation, such as AI driven green finance tools, also promotes SMEs green innovation through financing activities and resource allocation optimization (Jiang et al., 2025).

Given the rising urgency to combat environmental damage, encouragement to utilize green finance is becoming more apparent (Wulandari, 2024). Some came from the individual personnel on SMEs like a person's financial literacy and digital financial ability or inside the firm itself like internal finance (Bouchmel et al., 2024). But some factors have conflicting results, based on their geographical location. In China, Indonesia, and the U.K., government's interventions improve green finance implementation and green transformation in SMEs (Luo & Ma, 2023; Owen, 2023; Aristei et al., 2024; Putri et al., 2025). But evidence from European countries shows that SMEs face financial constraints from external sponsors (like banks) and public procurements (Bouchmel et al., 2024; Schäfer et al., 2024).

Even though the call for sustainability has become more prominent in recent years, there's still evidence of limited awareness of government-backed funds, uneven distribution of said funds, and incoherent government policies and incentives on green finance and green investment activities in SMEs.

## **6. Conclusion**

Literature of this topic has shown support for the conclusion that green finance has a significant positive impact on SMEs. Empirical studies and theoretical frameworks from various researches have consistently highlighted the importance of SMEs having access to sustainable financing to enable them to adopt environmentally responsible practices that would also improve resource efficiency and enhance their performances. The results show that not only is Green Finance implementation in SMEs heavily encouraged, but it is also essential for the development of a sustainable economy.

However, the consistent problem that has been found in this body of literature is that there are constraints hindering the widespread adoption of green finance among SMEs. Barriers such as limited awareness of green financial instruments, a lack of technical capacity to implement sustainable projects, the financial risk that need to be considered, and the restricted access to fundings have led to low motivation for SMEs to pursue transitioning to sustainable financing. What may overcome these constraints as the literature has emphasized are government support. If the government is willing to set a favorable environment for SMEs to engage in sustainable finance comfortably, more enterprises will start implementing it, which also helps in developing the economic growth of its countries.

While current studies provide a solid foundation, future research needs to focus on exploring specific and nuanced dimensions of this topic. Future research is suggested to investigate supportive elements towards green SME such as researching its sector-specific barriers and enablers, the regional policy effectiveness, and the financial institutions' role in green SME lending. These focused topics could contribute to a deeper understanding towards how to form a comprehensive strategy for scaling up green finance implementation in the SME sector globally.

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