

Internal and External Drivers of Green Entrepreneurship in SMEs: A Systematic Review

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This study explores the role of small and medium-sized enterprises (SMEs) in advancing sustainable environmental development through green entrepreneurship. Using the PRISMA protocol, a systematic literature review was conducted on articles published between 2013 and 2023 in Scopus and Web of Science. After applying defined inclusion criteria, 54 peer-reviewed studies were analyzed. The findings revealed four key thematic categories: (1) entrepreneurial characteristics and motivations, such as ethical commitment and personal values; (2) external drivers including government policy, market demand, and financial factors; (3) internal drivers like green entrepreneurial orientation (GEO); and (4) organizational factors such as CSR and green technologies. The review also highlights a disconnect between SME sustainability initiatives and global frameworks like the UN Sustainable Development Goals (SDGs), and a lack of strong global policy support. This study contributes by mapping key drivers of green entrepreneurship and offering recommendations for aligning SMEs with international sustainability agendas.

Introduction

Green entrepreneurship (GE) has evolved since the early 1970s, when environmental protection became a global priority, exemplified by the UN Environment Programme's Stockholm Declaration (UNEP, 1972), which called for reducing human activity's environmental impact (Melay et al., 2017). However, the earliest instances of green business date back even further, to the 1960s, when the environmental degradation caused by

industrialization prompted industrialized nations to introduce laws aimed at protecting the environment (Asad et al., 2023; Dhrifi, Jaziri and Alnahdi, 2020). Over the following decades, discussions around sustainable development expanded beyond their political origins to emphasize its academic relevance to entrepreneurship. This includes terms such as ecopreneurship, environmental entrepreneurship, enviropreneurship, and sustainable entrepreneurship, as well as green startups, green SMEs, and established firms adopting sustainable practices (Isaak, 2002). As

global environmental crises have intensified in the current century, GE has emerged as a vital response to these cumulative and interconnected challenges (AlQershi et al., 2023; Boumediene & Lotfi, 2019), fostering innovation and the development of products and processes that minimize negative environmental impacts (Silajdžić et al., 2015).

Theoretically, this study draws on the Resource-Based View (RBV), Institutional Theory, and the Stakeholder Theory to explain how internal capabilities (e.g., entrepreneurial orientation, ethical commitment) and external conditions (e.g., policy incentives, market pressures) shape the adoption of green entrepreneurship within SMEs.

While previous reviews have focused on broader sustainable entrepreneurship or green innovation in large firms, few have specifically synthesized the drivers of green entrepreneurship in the SME sector, especially in the context of the post-2015 UN Sustainable Development Goals era.

This research is the first work to review the internal and external drivers of green entrepreneurship in SMEs. It seeks to know whether the related literature clarified the role of SMEs in achieving sustainable environmental development. Therefore, this article is an endeavour to achieve the objectives listed in the following subsection.

Objectives

This study aims to systematically investigate the role of small and medium-sized enterprises (SMEs) in promoting sustainable environmental development through green entrepreneurship.

Methodology

This systematic review article, conducted in January and February 2025, adopts the PRISMA protocol for conducting a review of papers published in Scopus and Web of Science. The initial search targeted studies addressing green

Specifically, it seeks to determine whether SMEs are actively contributing to sustainability goals as reported in the existing literature. Additionally, the review explores the extent to which green entrepreneurship has been emphasized in academic research over the past decade and identifies the key internal and external drivers that facilitate or hinder the adoption of green entrepreneurial practices within SMEs. A further objective is to assess whether global or national legislative frameworks explicitly support or guide sustainable environmental development through green entrepreneurship in the SME context. Together, these aims form the foundation for evaluating how SMEs can align more effectively with international sustainability agendas, particularly the United Nations Sustainable Development Goals (SDGs). It is an attempt to examine the hypotheses listed in the following subsection.

Review Questions

RQ1: To what extent do SMEs contribute to sustainable environmental development through green entrepreneurship?

RQ2: How has green entrepreneurship been positioned in academic research on SME sustainability during the past decade?

RQ3: What are the key internal and external drivers of green entrepreneurship in SMEs as identified in the literature?

RQ4: To what extent do global or national legislative frameworks support green entrepreneurship in SMEs?

entrepreneurship and published within the timeframe spanning from 2013 to 2023. A total of 542 documents were retrieved: 286 from Scopus and 256 from Web of Science. However, after applying the inclusion and exclusion criteria, only 54 papers were deemed eligible. Notably, although the search covered publications starting from 2013,

all the included studies were published between 2015 and 2023. This pattern reflects the intensification of global interest in green entrepreneurship following the adoption of the Sustainable Development Goals (SDGs) in 2015,

particularly in the context of SME engagement with sustainable innovation.

The search for the relevant papers was done through the use of certain search entries which are listed in the following table.

Table 1. Search entries used for finding out the relevant papers

Search entries	Sustainable entrepreneur, green entrepreneur, eco entrepreneur, ecopreneur, environ entrepreneur, enviropreneur, sustainopreneur, small and medium sized enterprise, SME, SMEs, medium business, small business, small firm, medium firm, small company, micro business, micro enterprise, small enterprise, or micro company.
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Note. Created by the author

These search terms were selected based on a pilot scan of literature and validated against terminology used in prior reviews of sustainable and green entrepreneurship.

The PRISMA flow diagram (Figure 1) visually summarizes the screening and selection process. A total of 542 records were retrieved from Scopus (286) and Web of Science (256). After removing 63 duplicate records and 327 records automatically excluded based on language, subject area, or document type filters, 152 articles remained for further screening. During the title and abstract review, 97 articles were excluded. These included 14 non-article formats (e.g.,

book chapters, reviews, case studies) and 83 articles that did not meet the thematic focus on green entrepreneurship in SMEs or lacked methodological relevance.

To ensure transparency and reproducibility, inclusion criteria required that studies: (1) explicitly examine green or sustainable entrepreneurship within the SME context; (2) offer empirical or conceptual insights relevant to environmental development; and (3) be published in peer-reviewed English-language journals. Studies focusing solely on sustainability education, consumer behavior, or non-SME contexts were excluded.

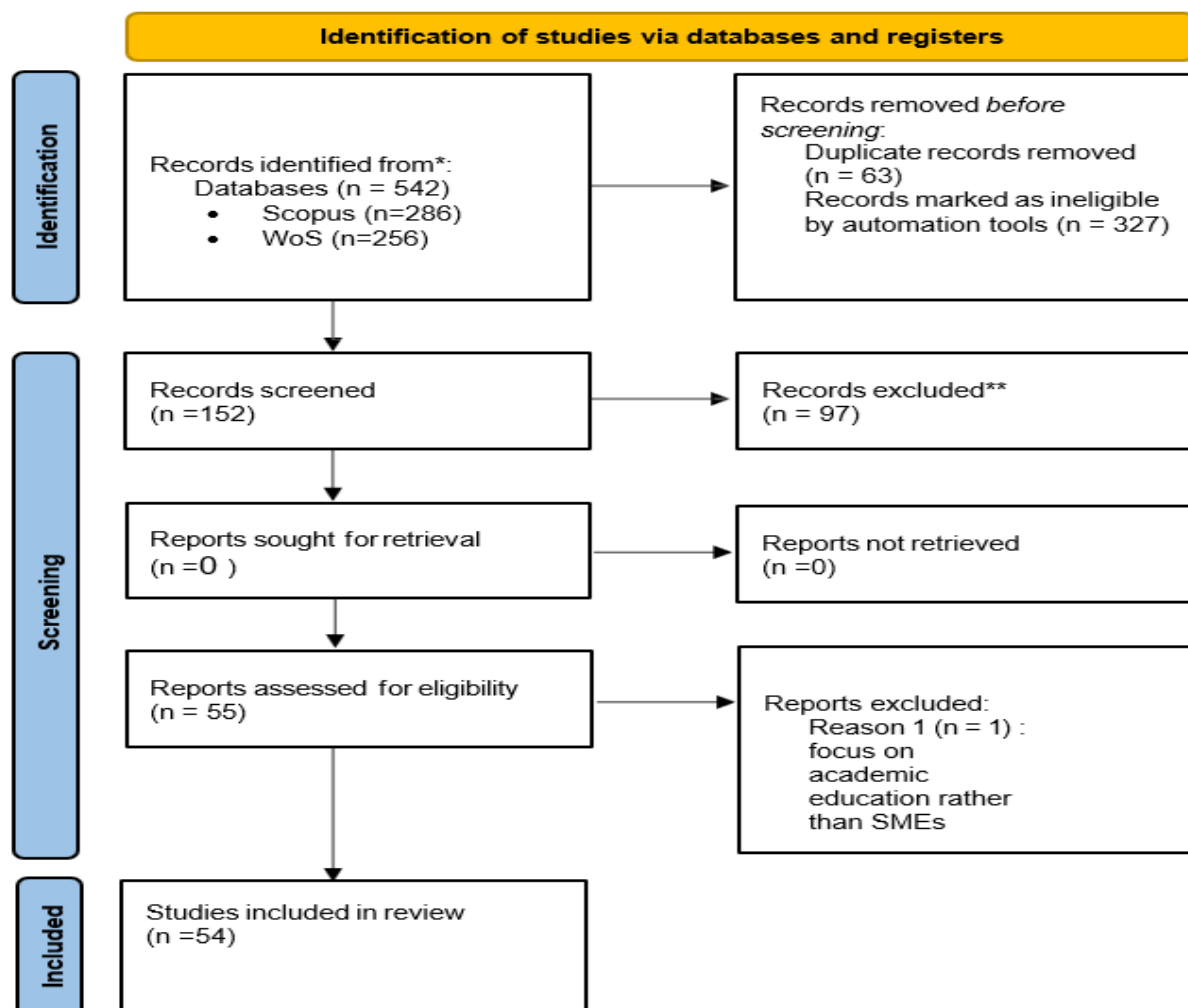


Figure 1. PRISMA Flow diagram of the study selection

Note. Adapted from PRISMA 2020 guidelines (Page et al., 2021).

Of the remaining studies, 55 full-text articles were assessed. One study was excluded due to its focus on sustainability education rather than business practices in SMEs. The final dataset thus consisted of 54 eligible peer-reviewed journal articles (37 from Scopus and 17 from Web of Science). To ensure academic quality, journals were evaluated based on standardized criteria from ABS, ABDC, and JCR Impact Factor rankings (see Table 2), and 44 studies from low-ranked

sources were excluded accordingly. This rigorous quality screening ensured that the evidence synthesized in this review reflects high-impact, peer-reviewed research that meets international academic standards.

Table 2. Conversion table of leading academic journal rankings

ABDC	ABS	JCR IF
A+	4*	≥ 5.0
A	4*	≥ 3.5
B	3*	≥ 2.5
C	2*	≥ 1.5
D	1*	≥ 0

Note. Modified from Kraus, Breier and Dasí-Rodríguez (2020)

Results

The results have been divided into two sections. Firstly, a descriptive analysis of the collected results will be presented. Subsequently, an examination of the substance of the papers encompassed in this literature review will be conducted. To enhance interpretive clarity, the findings are categorized into thematic domains and their relative frequencies. These articles were categorized into 7 research themes.

Descriptive Analysis

This systematic literature review

encompasses an analysis of 54 scholarly articles published within the timeframe spanning from 2015 to 2023. Collectively, these publications incorporate a diverse corpus, comprising 41 distinct sources, attributed to 168 authors, encompassing a vast array of 5159 references, and 271 keywords.

As illustrated in Figure 2, there has been a noticeable increase in the number of publications over the past decade, with a marked surge following the adoption of SDGs in 2015. This trend underscores the growing academic recognition of green entrepreneurship as a significant

component of sustainability research in the SME context.

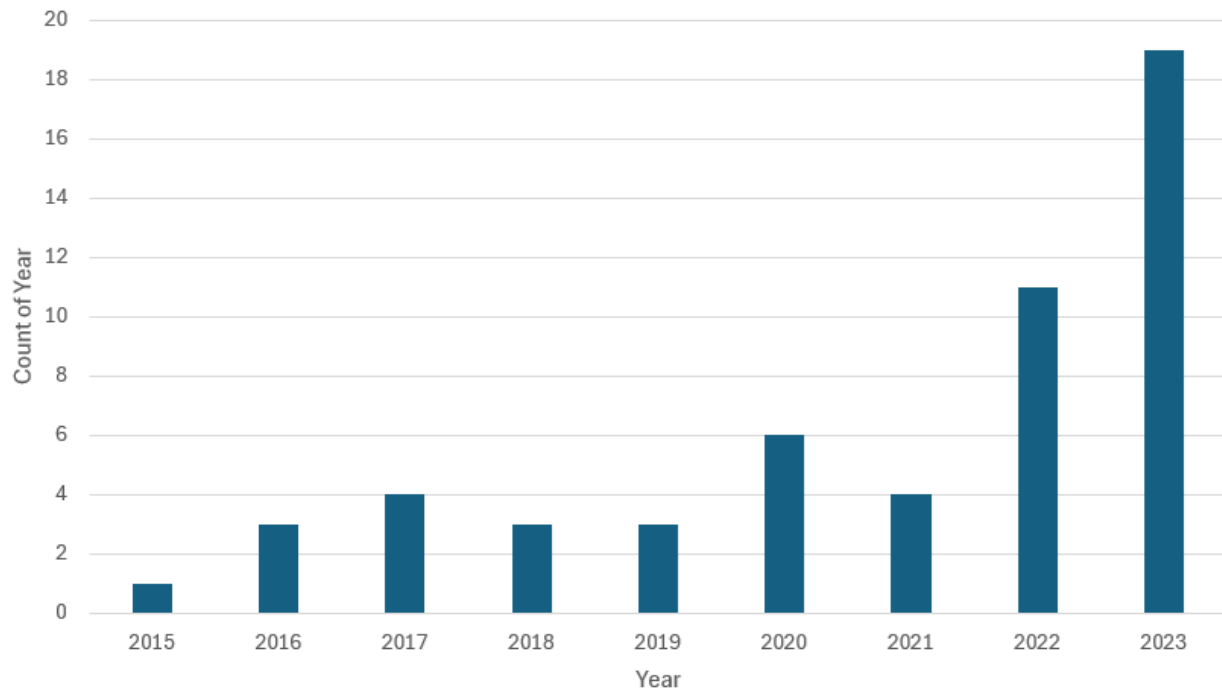


Figure 2. Number of Publications per Year

Note. Created by the author

The database analysis highlights the geographical origins of the study samples, focusing on the regions where research has

been most frequently conducted. Further details are shown in Figure 3.

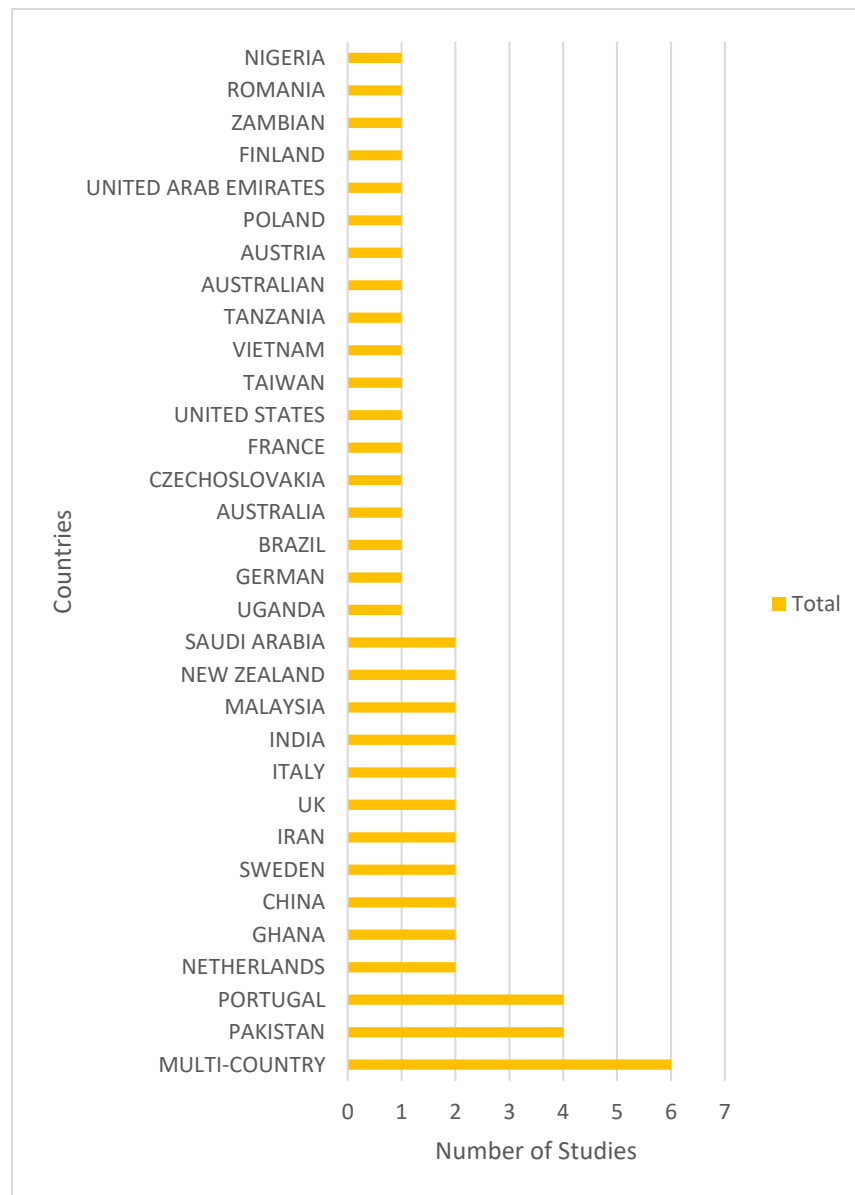


Figure 3. Countries Representing the Study Sample in the Systematic Review

Note. Created by the author

The distribution reveals a clear dominance of quantitative approaches, which account for 61% of the studies (33 articles). In contrast, qualitative approaches and mixed-methods are significantly less common, representing 24% (13 articles) and

15% (8 articles), respectively. This indicates that research in this field is heavily skewed toward quantitative methods, with minimal reliance on qualitative or mixed approaches (Figure 4).

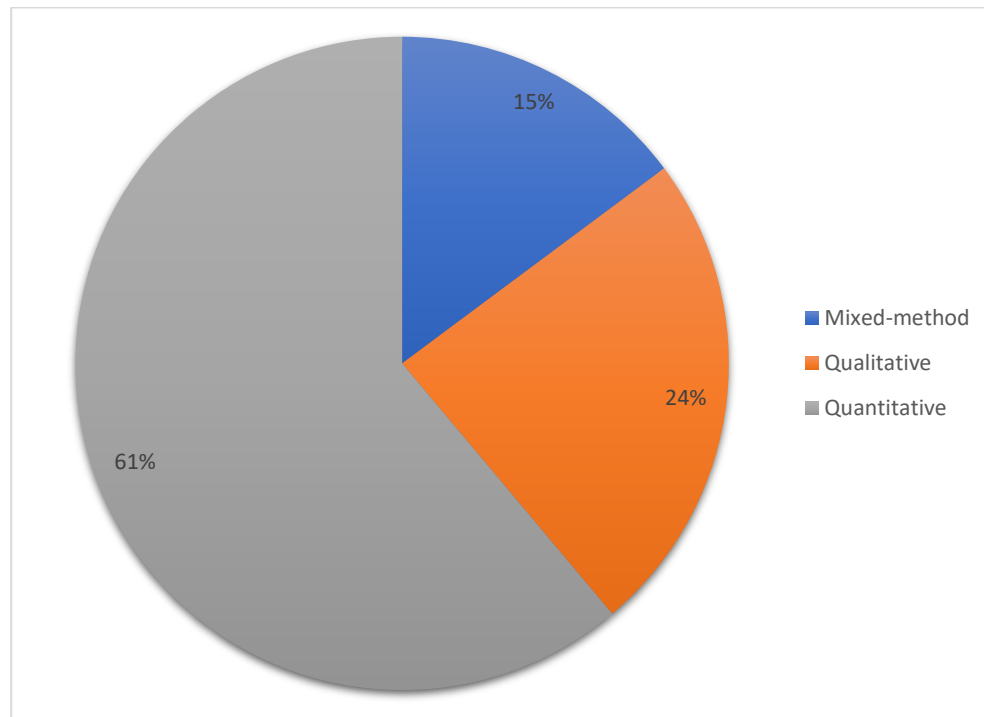


Figure 4. Distribution of Methodological Approaches

Note. Created by the author

The distribution of research is also evident in the journals publishing these studies, with

certain journals emerging as key contributors to the field, as delineated in Table 3.

Table 3. Sources of Articles

Journal	Number of articles	ABS 2024	ABS 2021	ABDC	JCR IF
Business Strategy and the Environment	9	3	3	A	13.4
International Entrepreneurship and Management Journal	3	1	1	C	5.6
Journal of Cleaner Production	2	1	2	A	11.1
Journal of Small Business and Enterprise Development	2	2	2	C	4.6
International Review of Entrepreneurship	2	2	2	NA	NA
Journal of Business Ethics	1	3	3	A	6.1

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Journal of Small Business Management	1	3	3	A	6.2
Journal of International Entrepreneurship	1	1	1	NA	3.3
Corporate Social Responsibility and Environmental Management	1	1	1	C	9.8
Management Research Review	1	1	1	C	2.6
Eurasian Business Review	1	2	2	C	3.5
Journal of Hospitality and Tourism Management	1	2	1	A	8.3
European Journal of Innovation Management	1	1	1	C	5.1
Journal of Management and Governance	1	1	1	C	2.7
Event Management	1	2	2	A	1.3
Local Economy	1	2	2	C	1.6
Annals of Regional Science	1	2	2	NA	1.7
Cogent Business and Management	1	1	1	NA	3.0
International Journal of Emerging Markets	1	1	1	B	2.7
African Journal of Economic and Management Studies	1	1	NA	C	1.3
International Journal of Entrepreneurial Venturing	1	1	1	NA	1.5
Journal of Intellectual Capital	1	2	2	B	6
International Journal of Entrepreneurship and Innovation	1	2	2	NA	2.7
Journal of Macromarketing	1	2	2	A	3.1
International Journal of Innovation Science	1	1	1	NA	2.9
China Finance Review International	1	1	1	C	8.2
International Journal of Trade and Global Markets	1	NA	NA	C	NA
Journal of the Knowledge Economy	1	1	1	C	3.3
Review of Managerial Science	1	2	2	NA	5.5
Management Decision	1	2	2	B	6.4
Small Enterprise Research	1	1	1	C	1.7
R & D Management	1	3	3	A	6.3
Strategic Change: Briefings in Entrepreneurial Finance	1	2	2	NA	2.8
Technovation	1	3	3	A	12.5
Social Responsibility Journal	1	1	1	B	3.2
Journal of Business Research	1	3	3	A	11.3
Technological Forecasting and Social Change	1	3	3	A	12
Journal of Business Strategy	1	1	1	B	NA
Transformations in Business and Economics	1	NA	NA	C	1.5
Journal of Business Venturing Insights	1	2	2	NA	NA
Journal of Business-to-Business Marketing	1	1	2	B	1.4

Note. Created by the author

Thematic Synthesis of Green Entrepreneurship Drivers

Based on qualitative coding and frequency counts, the selected articles were organized

into seven thematic clusters. Table 4 provides an overview of these themes and their prevalence across the 54 studies.

Table 4. Thematic Clusters and Frequency of Green Entrepreneurship Drivers in SMEs

Theme	Description	Frequency (No. of Papers)
Entrepreneurial characteristics and motivations	Includes mindset, identity, ethics, and psychological drivers	31
External economic and financial factors	Focus on funding, tax incentives, market access	27
Government policy and regulatory environment	Includes both enablers and constraints across regions	22
Market demand and opportunities	Demand-side factors driving sustainability innovation	18
Green Entrepreneurial Orientation (GEO)	Strategic orientation and leadership commitment	20
Organizational factors	CSR practices, stakeholder engagement, employee dynamics	19
Green technologies	Adoption of sustainable innovations and process redesign	15

These clusters reflect the multidimensional nature of green entrepreneurship in SMEs, with entrepreneurial motivation and external economic factors emerging as the most frequently cited themes. However, thematic overlaps were common across categories.

Significantly, the existing literature on the internal and external drivers of green entrepreneurship in SMEs has revealed the vital role played by green entrepreneurship in SMEs in achieving sustainable environmental development. Studies like (Karimi and Nabavi Chashmi, 2019; Uslu et al., 2015; Karimi and Nabavi, 2019;

Abdelwahed et al., 2023) have highlighted the role of SMEs in achieving sustainable environmental development through green entrepreneurship. The findings of such studies unveil a sense of increasing global awareness of GE as an important approach to achieve sustainable environmental development. Taken together, these insights emphasize that SMEs, through their green initiatives, are not merely responding to policy or market pressures, but are actively shaping pathways toward sustainable development.

Furthermore, there are certain internal and external factors that drive green entrepreneurship in SMEs towards achieving sustainable environmental development. Some of these factors are related to entrepreneurial identity and mindset (Melay et al., 2017; Hall, Daneke and Lenox, 2010), and ethics and social commitment (Hamann et al., 2017; Torelli and Balluchi, 2023), personal value and internal beliefs (Dornier, 2021).

The factors influencing GE in SMEs have been categorized into external factors and internal factors. The external factors include economic and financial factors (Gupta, Kumar and Wasan, 2021; Mondal, Singh and Gupta, 2023b), government policies (Adomako, et al., 2021; Mondal, Singh and Gupta, 2023a; Pierscieniak et al., 2023), and market demand and opportunities (Manesh and Rialp-Criado, 2019). Furthermore, the internal factors include Green Entrepreneurial Orientation (GEO) (Coelho et al., 2023; Jiang et al., 2018; Leonidou et al., 2017).

Despite the wide coverage of these themes, the findings suggest limited scholarly engagement with global legislative frameworks, such as how SMEs are

incentivized (or constrained) by binding international sustainability treaties or policies.

This thematic profile also shows a geographical skew in research outputs, with the majority of studies focusing on Europe and East Asia, while Africa and Latin America remain underrepresented in empirical investigations.

While green entrepreneurship in SMEs has gained scholarly attention, the existing literature largely overlooks the role of international and national legislative frameworks in supporting or shaping these practices. There is limited exploration of how global initiatives, such as the UN Sustainable Development Goals, environmental treaties, or green taxonomies, are aligned with or translated into actionable policies that influence SME-level green innovation.

Discussion

The concept of Green Entrepreneurship (GE)

In this study, GE is defined as: *"the process of developing innovative solutions that primarily focus on minimizing the environmental impact of economic activities. It aims to offer environmentally friendly products and services, preserve natural resources, and reduce pollution, while achieving profitability in a way that supports long-term environmental sustainability."* This definition was developed based on a review of several existing definitions, synthesizing key elements to create a more concrete and focused understanding of how GE can balance ecological responsibility with economic viability.

The Concept of Green Entrepreneurship (GE)

In this study, green entrepreneurship (GE) is defined as “the process of developing innovative solutions that primarily focus on minimizing the environmental impact of economic activities. It aims to offer environmentally friendly products and services, preserve natural resources, and reduce pollution, while achieving profitability in a way that supports long-term environmental sustainability.” This definition was synthesized by reviewing multiple conceptualizations from existing literature, aiming to establish a more focused and actionable interpretation of GE’s dual

emphasis on ecological responsibility and economic viability.

A wide variety of definitions have emerged in the literature, reflecting different priorities

across contexts such as innovation, environmental protection, ethical business models, and social entrepreneurship. A summary of these definitions is presented in Table 5, highlighting the range of perspectives that have shaped current understanding of GE.

Table 5. Definitions of Green Entrepreneurship

Compiled from Farinelli et al. (2011), Mondal et al. (2023), Melay et al. (2017), Gao et al. (2019), Silajdžić et al. (2015), OECD (2009), AlQershi et al. (2023), Jones (2017), Muo & Azeez (2019), and others.

Original Source	Cited by	Definition
Farinelli et al. (2011)	Ebrahimi & Mirbargkar (2017)	“The implementation of innovations related to sustainable, which its main objective is implementing them and promoting green economy”.
Mondal, Singh and Gupta (2023a)	Mondal, Singh and Gupta (2023a)	“The creation of new products and services that create economic opportunities while reducing negative environmental impacts and promoting sustainable development”.
Mondal, Singh and Gupta (2023b)	Mondal, Singh and Gupta (2023a)	“Starting a business with the aim of providing solutions to environmental problems”.
Gao et al. (2019)	Yin et al. (2022)	“Entrepreneurial behaviour in an enterprise’s green innovation of products, services, and market development to generate profit while considering environmental protection”.
Melay et al. (2017)	Melay et al. (2017)	“Green entrepreneurship is understood as profitable and innovative entrepreneurial activity, which seeks to positively use its influence on society, economy and the environment. This entrepreneurial activity can take place in various organisational types such as start-ups, social enterprises, public institutions, well-established SMEs, and local or multinational corporations”.

Silajdžić et al. (2015)	AlQershi et al. (2023)	“Businesses reducing or avoiding processes that negatively affect the natural environment and benefits both individuals and society”.
OECD (2011)	AlQershi et al. (2023)	“A commitment to producing products that comply with environmental requirements, emphasizing the role of environmentally friendly products and businesses”.
AlQershi et al. (2023)	AlQershi et al. (2023)	“The development of pioneering, unique, and proactive ideas by entrepreneurs, focused on solving environmental problems through products that do not harm the environment or society. Green entrepreneurs aim to contribute to environmentally friendly business sustainability”.
Jones (2017)	AlQershi et al. (2023)	“Companies carrying out environmentally committed business practices, which are reflected in all of its goods and products, and as a strategy for establishing relationships between companies and the environment, and includes employees and customers”.
Muo and Azeez, (2019); Yusoff et al. (2019)	AlQershi et al. (2023)	“The contribution of corporate policies and practices to preserving the environment by defining the direction and contribution of the company in protecting and preserving natural resources”.
Demirel et al. (2019)	Asad et al. (2023)	“An inclination to start green operations in order to pursue prospective prospects that result in both economic and ecological benefits. In line with this viewpoint, green entrepreneurship demonstrates environmentally friendly innovation, market awareness, and risk-taking in business practices”.
Halдар (2019)		

Note. Created by the author

The emergence of GE as a concept is intertwined with global environmental movements and the growing need for sustainable economic models. Its goals include waste reduction, resource conservation, ethical production, and green innovation. Studies show GE plays a crucial role in addressing climate change and environmental degradation by stimulating eco-innovation and shifting traditional economic models toward circular and low-impact alternatives.

GE has demonstrated practical application across various industries. In the U.S., GE has been pivotal in advancing wind energy technologies, while in New Zealand it has transformed waste recycling practices.

Such case-specific evidence highlights GE's universal adaptability and sectoral importance.

In developing countries like Vietnam and Pakistan, GE is enabling a structural shift toward sustainability in local markets and business cultures. Eco-entrepreneurs in these regions are utilizing local knowledge, community support, and sustainable business models to address systemic environmental challenges while promoting inclusive economic growth.

From a theoretical standpoint, GE can be examined through multiple lenses. The Resource-Based View (Barney, 1991) interprets green entrepreneurial orientation

(GEO) and sustainability-aligned values as firm-level capabilities that provide competitive advantage. Institutional Theory (DiMaggio & Powell, 1983) explains how green entrepreneurs navigate normative, regulatory, and cultural pressures to secure legitimacy in their ecosystems. Additionally, Stakeholder Theory (Freeman, 1984) highlights how GE arises from entrepreneurs' accountability to diverse constituencies, including customers, communities, and regulators, who demand ethical and ecologically responsible practices.

Ultimately, GE does not exist in a conceptual vacuum. It evolves in response to external environmental imperatives, internal value systems, and a dynamic policy and market landscape. As this review will further show, the success and orientation of GE efforts in SMEs are shaped by a confluence of internal and external drivers, which can be analytically organized into micro, meso, and macro levels of influence.

Entrepreneurs' Characteristics and Motivations

Entrepreneurial Identity and Mindset

Entrepreneurial identity and mindset are pivotal in driving sustainability-oriented practices within SMEs and beyond (Melay et al., 2017). Lack of knowledge among entrepreneurs significantly hinders the advancement of sustainable entrepreneurship, as many struggle to understand how to effectively implement sustainability within their firms. Similarly, limited personal motivation and low enthusiasm for sustainability further restrict the adoption and integration of sustainable

practices. At the same time, the characteristics and motivations of entrepreneurs, such as proactivity, leadership, resilience, strategic planning, networking capabilities, and a willingness to venture beyond comfort zones, are critical in fostering sustainability.

The mindset and leadership of entrepreneurs also significantly influence the strategic direction and operational priorities of green SMEs (Kraus, Kauranen and Reschke, 2011; Melay et al., 2017). Green entrepreneurs are typically driven by a desire to protect the environment and enhance societal welfare, extending their focus beyond profit generation (Melay et al., 2017). These values are integrated into their business operations, fostering cultures of environmental and social responsibility. Entrepreneurial culture in a specific region consists of the attributes, values, mindsets, and behaviours of entrepreneurs that develop over time, described as a society that enhances the exhibition of the attributes, values, beliefs and behaviours that are related to entrepreneurs. Attitudes toward risk and failure are crucial, shaping whether local residents view business failure as a personal shortcoming or as a learning opportunity (Theodoraki, Dana and Caputo, 2022).

This entrepreneurial lens aligns with the Resource-Based View (RBV), where personal traits and strategic capabilities act as unique internal assets that enable SMEs to implement environmentally innovative practices (Barney, 1991). Entrepreneurial identity also responds to institutional signals, reinforcing the relevance of Institutional Theory (DiMaggio & Powell, 1983) in explaining sustainability adoption as a legitimacy-seeking behaviour.

Ethics and Social Commitment

Entrepreneurs are increasingly motivated by ethical values and socio-environmental responsibilities, which significantly influence their adoption of sustainable practices. Ethical commitments often serve as a primary driver for entrepreneurs, pushing them to implement business activities that prioritize environmental protection and biodiversity conservation (Hamann et al., 2017; Torelli and Balluchi, 2023). These ethical considerations go beyond large companies and become especially evident in SMEs, where entrepreneurs feel a strong impulse to produce in an eco-conscious way and ensure the sustainable use of natural resources (Hamann et al., 2017; Torelli and Balluchi, 2023).

Socio-ethical motives further cement this dedication, mainly in ecopreneurship contexts, wherein entrepreneurs focus on tackling societal issues like climate change, public health, and food safety. As an example, moral obligations towards conserving the environment for future generations or preventing the degradation of soil resources have been identified in the literature as one of the principal motivating factors behind sustainable farming practices (McEachern and Willock, 2004). These values serve as the basis for converting the system towards sustainable and organic business approaches out of a sense of ethical obligation to conserve natural resources.

Attitudes contribute significantly to shaping these ethical orientations, with entrepreneurs embodying a combination of emotional involvement with nature, acquired beliefs, and deliberate intention. The positive

perspective thereby allows them to view green practices as opportunities instead of obligations; this convergence of personal values with professional objectives leads to the construction of business models increasingly focused on balancing profitability with environmental stewardship. Entrepreneurs, closely allied with nature, are encouraged to act in an environment-positive manner that includes reducing wastes, utilizing recycling materials, and lessening detrimental impacts on the environment.

Theoretically, the shift is supported by an ethical inclination toward Stakeholder Theory (Freeman, 1984), which considers enterprises embedded in social and ecological networks. From this perspective, green entrepreneurship is not limited to an economic activity but is rather an ethically framed response to stakeholder demands for environmental responsibility.

Personal Value and Internal Beliefs

Sustainable entrepreneurship has strongly personal values and motivations, which in turn influence organizational strategies and practices. Many sustainable entrepreneurs make their personal beliefs and commitment to sustainability the cornerstone of their organizational identity, permeating every organizational decision (Dornier, 2021). Leaders acting on their axioms create a culture within their organizations of unwavering commitment to sustainability (Dornier, 2021).

Eco-entrepreneurs integrate personal values such as appreciation of nature and conservation into business strategies (Swan and Morgan, 2016). Having often been active

in environmental causes before, they regard their businesses as vehicles for societal change, with priorities placed on sustainability rather than maximizing profits (Swan and Morgan, 2016). For instance, eco-entrepreneurs keep their businesses intentionally small-scale, with low environmental impact, to stay true to their green values rather than allowing growth at the cost of sustainability (Swan and Morgan, 2016). From a financial point of view, in fact, this is limiting, but it affords them a competitive advantage, allowing them to offer a one-of-a-kind environmentally conscious experience (Swan and Morgan, 2016).

Although the bases for activity are common among both phenomena, there is a notable tension between financial imperatives and the commitment to sustainability (Manesh and Rialp-Criado, 2019). As it remains imperative that economic viability be incorporated into sustainable entrepreneurship, conflicts occasionally arise in the domain of social and environmental goals that sometimes are opposed by market forces (Manesh and Rialp-Criado, 2019). Eco-entrepreneurs' intentional decisions to value choice over growth characterize this tension and display the challenges and opportunities of sustainable innovation (Swan & Morgan, 2016).

This analysis paints a strategic picture of SMEs balancing their internal logic of sustainability against quite stern external financial constraints, which is essentially the duality the Triple Bottom Line attempts to resolve when it brings together profit, people, and planet.

Psychological and Motivational Factors

Motivation is defined by Mullins (2010) as an internal state that forces the individual to achieve a goal to satisfy a need or an expectation. It is an internal process that activates, directs, and sustains behaviour (Choongo et al., 2017). It is said that entrepreneurs are motivated by internal and external forces, with the external ones being perceived threats to a personal or collective welfare (Choongo et al., 2017). This double motivation-the practical benefits mingling with moral convictions-is a way through which intrinsic values and perceived rewards guide entrepreneurial behaviour. Of the several entrepreneurial motivations, women entrepreneurs have special drivers, crafting their social roles and economic concerns.

Psychological characteristics are paramount in motivating entrepreneurs, especially those who mainly carry out sustainability-oriented entrepreneurship; these include environmental awareness, risk-taking attitude, responsibility, and innovativeness (Agrawal et al., 2022; Mondal, Singh and Gupta, 2023a; Piwowar-Sulej et al., 2021). Such characteristics lead to a higher degree of innovativeness and environmental consciousness, specifically in fields such as sustainable waste management and activities toward the circular economy (Mondal, Singh and Gupta, 2023a; Piwowar-Sulej et al., 2021). Moreover, entrepreneurial skills such as creative problem-solving and strategic vision enable men and women to identify entrepreneurial opportunities out of environmental challenges (Agrawal et al., 2022).

These green initiatives can oftentimes flourish only in certain circumstances, such as when collaborating with an NGO, working with NGOs while having access to digital tools, partnering with agencies, or maybe even associating with research-based organizations (Mondal, Singh and Gupta, 2023).

The integration of personality traits, morality, and cognitive skills exemplifies a micro-foundational perspective in the RBV, highlighting the importance of individual-level resources in strategic environmental orientation (Barney, 1991).

The lifestyle-based motivations behind entrepreneurship are a way to emphasize that the entire business setup is being evaluated on how it fits into the value system and aspirational goal of an entrepreneur. The entrepreneur fits into a category of entrepreneur who is striving to fit his or her business into a lifestyle, which by contrast also means giving extra emphasis to intangible rewards such as self-development and empowerment. Many entrepreneurs engage in sustainable practices through ecological management and conservation of culture and heritage to promote the idea of Eco land development as ecopreneurs. These motivations are not merely for individual fulfilment but also feed into community resilience and sustainable development.

Another important psychological factor is placing attachment. Entrepreneurs who identify strongly with their locales are considered more likely to have themselves set up sustainable practices and to protect their environments. Especially in the rural setup, this attachment encourages the formation of innovative and tailor-made

solutions to local problems, benefiting both the environment and the communities (Cohen and Muñoz, 2015).

Place-based motivations therefore further buttress the argument in support of localized institutional dynamics in sustainability transitions. Here lies the connection with Institutional Theory insofar as entrepreneurial behaviour is affected by not just national policy or market signals but also by the normative expectations that are embedded in community identity (DiMaggio & Powell, 1983).

In addition, motivational heterogeneity among green entrepreneurs, from impact-oriented ecopreneurs to lifestyle-driven founders, offers a promising avenue for future empirical work. This insight, therefore, further strengthens the proposition of linking psychological types with sustainability outcomes at the firm level.

The combination of intrinsic motivation, external support system, and traits places a robust basis for nurturing sustainability processes concerning entrepreneurship. Blending the so-called values, capabilities, and resources, entrepreneurs must support the life of an enterprise together with sustainability and community development (Abdelwahed et. al, 2023; Mondal, Singh, and Gupta, 2023a).

External Factors

Economic and Financial Factors

The economic and financial enablers must dominate, promoting reuse and recycling activities of materials and resources while thereby inducing enterprises to

embrace sustainable work methods (Gupta, Kumar and Wasan, 2021; Mondal, Singh and Gupta, 2023b). The economic and financial enablers include such varieties of inducements as subsidies, tax incentives, and access to capital, among others, enabling MSMEs to take on sustainable practices (Mondal, Singh and Gupta, 2023). Among the inducements are those that would finance technological advancements in an environment supportive of green, circular, and sustainable businesses. Governments in several developing and developed countries have offered financial incentives to entrepreneurs and enterprises in many forms, including grants, subsidies, and taxation exemptions for entities engaging in sustainable practices. Entrepreneurial firms enhance the fundamental functioning of the economy by generating employment, promoting innovation, and enhancing productivity. The accessibility of various financial resources has positively influenced entrepreneurial proclivity. Financial resources, encompassing wealth and household income, incentivize individuals to pursue entrepreneurship. Capital accessibility enhances entrepreneurs' involvement in entrepreneurship (Hwang et al., 2019). Similarly, access to social capital positively and significantly influences the enhancement of entrepreneurial activities and aids entrepreneurs in overcoming resource limitations (Bauernschuster et al., 2010). It advocates for entrepreneurship just in the presence of conducive cultural capital.

Access to green markets is essential, as the rising demand for sustainable products and services enables companies to achieve higher economic returns, encouraging further investment in green innovations to meet

consumer expectations. These demand-driven incentives provide businesses with a competitive advantage in emerging green markets. Altogether, these economic and financial drivers contribute to sustainable economic development and align closely with broader goals of environmentally conscious economic growth (Alwakid, Aparicio and Urbano, 2020; Nordin and Hassan, 2019).

The importance of financial enablers also aligns with Stakeholder Theory, where access to responsible investors and financial institutions is framed as a response to growing stakeholder pressure for accountability and sustainability transparency (Freeman, 1984).

Beyond internal financial considerations, external green finance frameworks and government policies play a crucial role in enabling sustainable practices and environmental responsibility (Baloch et al., 2020; Sun et al., 2019). Hence, the important role played by green finance in terms of supporting sustainable entrepreneurship and CSR approaches, particularly under economic challenges COVID-19 presented (Mohsin, Abbas et al., 2019). From an economic perspective, government measures are important to attract private as well as commercial capital toward green projects so as to lessen risks involved in investments and uplift the financial viability of sustainable projects (Iqbal et al., 2020; Sun et al., 2019).

Government Policies

Government policies can work to either foster or to hinder sustainable

entrepreneurship (Adomako, et al., 2021; Mondal, Singh and Gupta, 2023). In many developing countries, entrepreneurs face several problems in entering the arena due to excessive bureaucracy and overlapped governmental functions (Adomako, et al., 2021; Egere et al., 2022). Such duplication also leads to inefficiencies and concomitant wastages of important resources (Egere et al., 2022). This is best illustrated in Nigeria, where MSMEs have to grapple with a minefield of registration protocols involving myriad agencies such as the National Agency for Food and Drug Administration and Control (NAFDAC) and the Standard Organisation of Nigeria (SON). Such procedures stifle every opportunity for innovation as they impose heavy financial and administrative costs on entrepreneurs, thus obstructing growth (Akuhwa et al., 2015). Egere et al. (2022) reveal there is express dissatisfaction by over 70% of the participants interviewed concerning the entrepreneurial ecosystem, alluding to the fact that current regulations and policies do not provide adequate support for sustainable entrepreneurship. Exacerbating maltreatment are institutionalized bureaucracy and corruption, thereby rendering a deficient policy and regulatory framework. The weak policies and regulations stand in the way of transitional entrepreneurship, as government departments are often either unequipped or lack money to implement and monitor policies efficiently, thereby putting in question market competitiveness and reducing the desired positive effects of sustainability orientation on firms in these developing economies.

This is, however, in a rather different position in terms of developing countries

such as Slovakia and the Czech Republic, where government policies have become almost a wall of opposition against GE (Kraus, Breier and Dasí-Rodríguez, 2020). Melay et al. (2017) indicate that green SMEs have been hindered in these countries due to legislative instability, excessive bureaucracy, and lack of actual governmental support. Thus, entrepreneurs were met with difficulties such as convoluted and ever-changing regulations, thereby impeding the launching and scaling of ventures that were environmentally conscious (Melay et al., 2017). To top it all, the lack of ample government incentives or financial support for green projects further magnified the obstacles faced by these SMEs as they scrambled to find their way through a hostile regulatory framework (Melay et al., 2017). This juxtaposition of Saudi Arabia's supportive stance with the stringent policies in Slovakia and the Czech Republic underscores the importance of stable, proactive government policies in spawning sustainable entrepreneurship (Melay et al., 2017).

The literature suggests that the extent to which global and national legislative frameworks support green entrepreneurship in SMEs varies significantly across regions. While some countries have enacted supportive policies and incentives, many SMEs still face regulatory barriers, bureaucratic inefficiencies, or a lack of coordinated frameworks. This disparity underscores a policy gap that limits the effectiveness of green entrepreneurship initiatives. Overall, the findings reflect a fragmented global policy landscape, where alignment with sustainability goals remains inconsistent, especially at the SME level.

These considerations strengthen the argument from Institutional Theory that regulatory and normative environments are crucial in shaping entrepreneurial agencies. If voids do exist, then SMEs lack the enabling context to practice environmental innovation (DiMaggio & Powell, 1983).

Market Demand and Opportunities

Market demand and emerging opportunities are driving internationalization and growth for the sustainable businesses (Manesh and Rialp-Criado, 2019). Entrepreneurs make use of their human- and social-capital resources, such as prior experience, knowledge, and networks, to identify and take advantage of emerging opportunities in the renewable energy market (Manesh and Rialp-Criado, 2019). This guided process of recognizing and exploiting the opportunity is instrumental in scaling their innovative technologies toward their solution of environmental concerns on a larger scale (Manesh and Rialp-Criado, 2019). Entrepreneurs enter a growing market for renewable energy solutions and equally act as a force for developing new products that solve global environmental problems, such as emission reductions and energy sustainability, while also yielding returns from the market (Manesh and Rialp-Criado, 2019).

Dynamics of green economics are of paramount importance to cater to the increasing market demand for environmentally benign goods and services (Abdelwahed, et al., 2023). With an increasing consumer preference for "natural," more and more businesses feel the pressure to

adapt green practices, and thus, a large set of opportunities has arisen in green production and procurement. Green opportunities enable SMEs to enter new markets, thus providing them with performance enhancement opportunities through the delivery of solutions geared toward environmentally conscious consumers (Abdelwahed, et al., 2023). Besides helping firms to conform to environmental policies, green opportunities also enable them to compete with those who provide products to an environmentally oriented market.

Customer participation is constructive for innovation in general, but particularly in green product development: It provides access to external resources and finance on which SMEs are dependent to innovate in green products (Chen and Liu, 2020). Collaborative clients could step in with finances and legitimise the green product development process, which in turn attracts further investments both from venture capitalists and government agencies (Chen and Liu, 2020). Also, client engagement aids in defining product criteria, such as choices of materials, energy-efficient solutions, and waste reduction strategies, thereby facilitating a close alignment of product design with both green specifications and customers' green preferences (Chen and Liu, 2020).

Another major factor causing changes to sustainable entrepreneurship is the evolution of consumer demand (Chen and Liu, 2020; Franco and Rodrigues, 2021). According to theory of consumer demand, the demand for certain goods fluctuates over time, obliging firms to always come up with new products or with newer versions of existing ones to meet the supply of changing

consumer needs. Since customer preferences do not remain uniform, the demand flowing to one particular product or service varies accordingly. Businesses therefore tend to change their products or services to suit consumer proclivities (variants) across locations as demographic factors such as age, gender, education, income, and so on, also vary between distinct locations (Baltas, 2003).

These dynamics also emphasize the increasing role that market-based legitimacy plays as another strategic concern for SMEs, where the alignment with green demand trends provides both revenue and symbolic capital in reputation-sensitive markets (DiMaggio & Powell, 1983).

Internal Factors

Green Entrepreneurial Orientation (GEO)

From the green entrepreneurial perspective, firms have just one crucial aspect through which they can affect the environment in which they operate (Coelho et al., 2023; Jiang et al., 2018; Leonidou et al., 2017). Sustainability orientation refers to the commitment of SMEs to integrating environmental and social operations into their strategic and operational planning (Khizar et al., 2023). The literature suggests that this orientation strongly influences social and environmental performance through embedding societal and environmental values within companies' strategic decisions (DiVito and Bohnsack, 2017; Khizar et al., 2023). Sustainability orientation complements green entrepreneurial orientation as it equips sustainable entrepreneur strategies to achieve the broader

triple bottom line objectives of society (Chistov et al., 2023). For GEO, Jiang et al. (2018, p.1312) defined it as "a predisposition to pursue potential opportunities that produce both economic and ecological benefits through initiating green activities."

The literature documents mainly in favour of GEO intervention toward sustainable performance enhancement, especially in relation to environmental and financial outcomes (Jiang et al., 2018; Tze San et al., 2022). Conversely, with respect to social performance, the influence remains mixed with varying such effects depending upon circumstances (Pratono et al., 2019). Green Technology Dynamism and employee environmental consciousness further act as moderators for the effect of GEO, underlying the importance of an environmentally conscious organizational culture (Guo et al., 2020; Tze San et al., 2022). From a stance of proactive green technology adoption and utmost consideration of environmental consciousness, GEO emerges as a potential and superior enabler for sustainable outcomes (Habib et al., 2020).

In terms of environmental innovation and green market opportunities, GEO promotes firms toward enhancement of both financial and environmental performance (Asad et al., 2023; Roscoe et al., 2019). Although, to attain such success, it demands a high degree of commitment toward environmental ethics along with coping up with financial constraints related to innovation (Ameer and Khan, 2023). Greener Technological Development enhances the GEO effects (Tze San et al., 2022), yet some studies warn that green entrepreneurship is not a sure shot for financial success (Y. Chen, 2018; Demirel et al., 2019). SMEs that

embrace GEO typically pursue environmentally friendly products, workplace safety, and consumer welfare, capturing cost savings through green innovations and attaining first-mover advantages in the market (Ameer and Khan, 2023; Asad et al., 2022; Jiang et al., 2018).

GEO serves as a firm-level operationalization of sustainability strategy, where internal vision and leadership translate environmental intentions into competitive positioning. From a Resource-Based View (Barney, 1991), GEO is a distinctive, path-dependent capability that can lead to sustainable advantage when supported by culture, learning, and top-management commitment.

Organisational Factors

Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) is an ambiguous term (Choongo et al., 2017). The concept, which was initially introduced in the 1970s, has since expanded to incorporate a broader scope, impacting

both societal and corporate (Carroll and Buchholtz, 2014). In 2001, the Commission of European Communities defined CSR as “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis” (Choongo et al., 2017, p. 31).

Table 6 further illustrates key characteristics of SMEs and their positive implications for CSR practices.

Table 6. Characteristics for CSR in SMEs

Characteristics	Possible positive implications for CSR and links with RBV logic
Key role played by the owner-manager/leadership, entrepreneurial management	A simple capital structure which means that the owner-manager does not need to justify any SD investments to external financiers; internal asset to foster possibility of implementing responsible practices rapidly and to develop key capabilities for building an advantage
Flexibility	Capacity to adapt and respond rapidly to the challenges and expectations of the stakeholders; internal asset to develop potential for innovation
Few formal structures/flat hierarchy	Relatively low coordination costs; collaboration and personal relations between the employees/direction, which encourages involvement, the sharing of knowledge and information; employee creativity encouraged and put to profit and better results
Limited resources	Propensity to collaborate with external partners and networks so as to obtain tangible competitive advantages as more resources and possibilities for action
Proximity with the local community	Taking into account the needs of the community; internal pressure encouraging involvement; causal link between business performance and good relations with the community; intangible assets to build a good reputation and gain support for operations among stakeholders

Note. Adapted from Courrent et al. (2018), based on the works of Aragon-Correa et al. (2008), Baumann-Pauly et al. (2013), and Torugsa et al. (2012, 2013).

The SME sector, by implementing sustainable practices, could realize lasting benefits since companies offering CSR benefits perform better, are better in reputation, and attract increased employee commitment. Environmental and social responsibility working conjointly may help firms improve financial performance, satisfy stakeholder expectations, and create greater consumer loyalty and market competitiveness (Mohsin, et al., 2019). CSR activities in SMEs tend to boost operational efficiency, reputation building, and engagement of employees, altogether forming competitive advantages towards sustainable growth (D'Aprile and Talò, 2015). Finally, employee commitment and engagement to an organization farm to enhance operational efficiency and reduce turnover. In a high CSR environment, a firm search for sustainable innovations that ensure employee safety and social welfare and under that environment promote incremental and radical innovation via knowledge sharing

(Brunswick and Vanhaverbeke, 2015; Shafique et al., 2021). Conversely, when CSR is low, employees are unlikely to step out of their comfort zones, they tend to be self-centred probably at the detriment of developing others (Getele et al., 2020; Shafique et al., 2021). CSR also opens the firms to access to ethical resources and stakeholders who, in turn, promote development and opportunities for innovations (Shafique et al., 2021).

CSR activities align with Stakeholder Theory (Freeman, 1984), where SMEs act not only in response to consumer expectations but also proactively engage with community, employee, and supply chain interests to maintain legitimacy and social capital.

Green Technologies

Green technology plays a pivotal role in achieving sustainability by focusing on

minimizing material waste and energy consumption while fostering environmental protection (Xia et al., 2022). These technologies enable firms to integrate eco-friendly practices into product development, manufacturing, and supply chain operations, reducing the environmental footprint of industrial activities. For instance, adopting green technologies can significantly lower variable costs during product design and development stages, leading to the production of high-quality goods with minimal resource usage.

The implementation of green technologies in SMEs represents a tangible expression of GEO and CSR strategies, reinforcing the firm's orientation toward environmental stewardship. Moreover, when integrated strategically, green technology becomes a dynamic capability, an asset that evolves through learning and innovation to address fast-changing environmental and regulatory landscapes.

Taken together, the reviewed literature reveals a consistent framework of internal and external drivers shaping the emergence and evolution of green entrepreneurship in SMEs. Internal factors such as ethical orientation, personal values, and green entrepreneurial orientation intersect with external forces like policy incentives, financial access, and market demand. This interplay illustrates the systemic nature of green entrepreneurship, emphasizing how SME engagement with sustainability is embedded in both organizational intent and institutional environment.

Findings

The SMEs play a role in achieving sustainable environmental development according to the findings of the related literature. The green entrepreneurship is given importance in the previous research. The key internal and external factors that drive green entrepreneurship in SMEs toward achieving sustainable environmental development include entrepreneurial identity and mindset, ethics and social commitment, personal values and internal beliefs, economic and financial factors, government policies, market demand and opportunities, and Green Entrepreneurial Orientation (GEO).

This review confirms the multi-level nature of green entrepreneurship, where individual (psychological and ethical), organizational (GEO, CSR), and systemic (market and policy) variables interact to shape sustainable practices in SMEs. These findings align with the integrated application of the Resource-Based View, Institutional Theory, and Stakeholder Theory, which collectively help explain the observed dynamics.

Despite increasing academic attention to these themes, the lack of global policy alignment and minimal engagement with international legislative frameworks, such as SDG-specific policies or WTO environmental trade protocols, remains a significant gap.

Noteworthy, the existing literature has ignored the global legislations concerned with achieving sustainable environmental development through green entrepreneurship in SMEs.

Comparison with Prior Reviews on Green Entrepreneurship

To clarify the unique contributions of this systematic review, Table 7 presents a comparative analysis between the present study and prior literature reviews in the field of green entrepreneurship.

Table 7. Comparison of the Current Review with Prior Green Entrepreneurship Reviews

Dimension	Prior Reviews (e.g., Muo & Azeez, 2019; Halidar, 2019)	Current Review
Focus on SMEs	General (SMEs not isolated)	Exclusive focus on SMEs
Inclusion of Theoretical Frameworks	Rare or absent	RBV, Institutional, Stakeholder Theory
SDG Alignment	Not explicitly addressed	Identified SDG misalignment
Geographic Coverage	Primarily Western economies	Global, includes underrepresented regions
Internal vs. External Drivers	Often mixed, no clear distinction	Clear micro (internal) vs. macro (external) synthesis
Use of PRISMA Protocol	Not consistently used	Strictly applied
Theme Frequency Analysis	Absent or superficial	Quantified across 7 themes
Future Research Agenda	Brief or absent	Structured 4-priority agenda

Limitations

This study adopted a systematic approach using the PRISMA protocol and initially included multiple academic databases, namely Scopus, Web of Science, and EBSCO. However, upon screening, it was found that all the results retrieved from EBSCO were exact duplicates of those already obtained from Scopus and Web of

Science. As a result, EBSCO was excluded to avoid redundancy. While this decision streamlined the dataset, it may have inadvertently limited the inclusion of grey literature, policy documents, or non-indexed emerging work.

Additionally, the study is limited by its reliance on English-language, peer-reviewed publications, which may have

excluded relevant regional insights published in local journals or policy reports. As such, the global generalizability of the results may be constrained.

Future studies may benefit from expanding the search to include sources like Google Scholar, international policy repositories, or multilingual databases to ensure broader thematic and geographic coverage.

Conclusion

This systematic review article explored the internal and external drivers of green entrepreneurship in SMEs, highlighting their role in achieving sustainable environmental development. The findings confirm that SMEs are actively contributing to sustainability, yet many still lack awareness of how their efforts align with broader global sustainability frameworks. In particular, the connection between SMEs' green initiatives and both the United Nations Sustainable Development Goals and global legislative frameworks remains underexplored. Without a clear understanding of how to integrate these goals into their business strategies, SMEs may miss opportunities to maximize their impact. Raising awareness and providing practical guidance on adopting sustainable practices such as improving resource efficiency, embracing clean energy, and promoting responsible production will be crucial in helping SMEs play a more significant role in global sustainability efforts.

This review contributes to the literature by offering a thematically structured synthesis of internal and external drivers and by identifying theoretical gaps related to policy alignment, institutional

support, and the operationalization of concepts such as GEO and CSR within SME contexts.

Implications for Policy and Practice

This review highlights the need for structured efforts to support SMEs in adopting sustainable business practices and aligning their operations with global sustainability initiatives. These implications are derived from patterns identified across the reviewed literature, particularly the barriers and drivers shaping SMEs' engagement with green entrepreneurship.

First, practical toolkits should be developed to help SMEs assess and map their activities against specific SDGs, particularly SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). These should include self-audit checklists and simple benchmarking metrics tailored for small enterprises.

Enhancing SMEs' awareness of the United Nations Sustainable Development Goals is crucial, which can be achieved through awareness campaigns and training programs that provide practical guidance on integrating sustainability into business models, particularly in resource efficiency, clean energy adoption, and responsible production.

Second, policy instruments must be regionally responsive. For example, governments in low- and middle-income countries should create one-stop sustainability registration hubs to reduce bureaucratic delays and offer bundled green

financing programs tied to innovation metrics.

Developing supportive policies and regulations that embed sustainability within national and regional business frameworks will encourage SMEs to align their practices with global sustainability goals through incentives, subsidies, and access to green financing.

Third, intermediary institutions such as chambers of commerce, incubators, and regional development agencies should act as conduits between SMEs and sustainability ecosystems, helping to translate policy into operational guidance.

Further research is needed to examine SMEs' understanding of and engagement with SDGs, identifying key barriers that hinder their adoption of sustainability-driven strategies.

Finally, fostering cross-sector collaboration among governments, businesses, and academic institutions can create platforms that promote green innovation and facilitate the exchange of best practices, ultimately enhancing SMEs' role in global environmental and economic sustainability.

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