

**ECO-ENTREPRENEURSHIP AND GREEN INNOVATION: A PATHWAY TO SUSTAINABLE DEVELOPMENT IN SMALL AND MEDIUM SCALE BUSINESS (SMES) NIGERIA**

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**ABSTRACT**

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*Eco-entrepreneurship and green innovation are crucial pathways to sustainable development, integrating environmental considerations into business practices. By developing eco-friendly products and services, minimizing waste, and conserving resources, these entrepreneurs contribute to a more sustainable future, fostering both economic growth and environmental protection. The purpose of this study is to investigate green innovation and eco-entrepreneurship as a way for small and medium-sized businesses to grow in a way that is good for the environment. To achieve this goal, descriptive survey was carried out using online survey platform to distribute the questionnaire developed for this study. The target population was 205 and the data collected were analyzed both descriptively and by using inferential statistics. The result of this study supports that eco-entrepreneurship and green innovation have significant impact of growth and overall performance of a firm. On this premise, conclusion was drawn and recommendation made.*

**Keywords:** Eco-entrepreneurship, green innovation, SMEs, Growth, Sustainable development.

## **Introduction**

Eco-entrepreneurship and green innovation are crucial pathways to sustainable development, integrating environmental considerations into business practices. By developing eco-friendly products and services, minimizing waste, and conserving resources, these entrepreneurs contribute to a more sustainable future, fostering both economic growth and environmental protection. This approach also addresses social responsibility, creating a positive impact on communities and promoting a more equitable and inclusive society (Barragán-Hernández, & Aguilar-Fernández, 2024). This paper examines eco-entrepreneurship and Green Innovation as a pathway to sustainable business development in selected SMEs in Nigeria. Business operations must shift from old models of operations driven by economic value to a sustainable strategy of environmental and social values as the globe works to achieve net zero by 2050 or before. Nigeria, a resource-based economy, has committed to transitioning to and expanding its renewable energy resources in accordance with international norms (Ilesanmi, 2025).

Investing in eco-entrepreneurship and sustainability is crucial for Small and Medium Enterprises (SMEs) due to its potential for long-term cost savings, enhanced competitiveness, and positive environmental and social impact. SMEs, as major drivers of innovation and job creation, need to adapt their business models to integrate green practices and digital technologies to thrive in a changing global landscape. Without doubt, eco-entrepreneurship encourages SMEs to minimize their environmental impact by reducing waste, conserving energy and resources, and adopting eco-friendly materials. According to the OECD (2025), SMEs may help conserve biodiversity and natural resources while reducing the consequences of climate change by putting sustainable practices into place. SMEs may save a lot of money by making investments in resource optimisation, waste reduction, and energy efficiency. In their studies, Rofiaty et al. (2024) and Sellappan and Shanmugam (2021) respectively reveal that sustainable practices often lead to improved operational efficiency, streamlining processes and reducing waste. SMEs that prioritize sustainability become more attractive to investors and financial institutions, opening up access to green financing options (Skordoulis et al., 2022). Thus, environmentally conscious businesses often enjoy a positive reputation, attracting environmentally aware customers and partners. In a globalized market, sustainable practices can be a key differentiator, giving SMEs a competitive edge. Raising awareness about the benefits of eco-entrepreneurship and providing SMEs with the necessary knowledge and training is crucial. This means that small and medium-sized businesses (SMEs) should not

only do the right thing by investing in eco-entrepreneurship and sustainability, but they should also do it for the long-term viability of their business. The need for this study comes from the reality that small and medium-sized businesses (SMEs) may enhance their reputation, develop new business opportunities, and help make the world a better place by being green.

### **Statement of problem**

Many years ago, companies, particularly small and medium-sized enterprises, were only concerned with turning a profit, regardless of the risks that their operations posed to the environment. That is no longer the case, however, since environmental preservation is now a commercial obligation. However, one of the primary obstacles to successfully advancing eco-entrepreneurship is the absence of clear operational instructions on successful business methods. Economic decarbonisation plans heavily rely on eco-entrepreneurship and eco-ventures, such as small- to medium-sized eco-enterprises and energy citizens that provide eco-solutions, ideas, services, and goods in renewable energy. A comprehensive assessment of how a lack of internal capacity within eco-ventures themselves can impede the successful design and implementation of transformative and sustainable business models that are able to capture business opportunities, address risks, and make significant contributions to global sustainability objectives has been lacking, despite the fact that numerous studies have highlighted how external factors like weak or unsupportive governance and policy landscape may hinder successful implementation of eco-entrepreneurial activities (Yi, Zeng, Chen & Shi, 2021). This study aims to fill this gap.

### **Objectives of the study**

The overall objective of this study is to investigate green innovation and eco-entrepreneurship as a way for small and medium-sized businesses to grow in a way that is good for the environment.

### **Research Questions**

1. What are the benefits of green innovation and eco-entrepreneurship to small and medium-sized businesses' growth and overall performance in Nigeria?
2. What are the challenges confronting the adoption of eco-entrepreneurship in SMEs Nigeria?
3. What methods could be used to create effective business strategies that promote eco-entrepreneurship?

## **Literature review**

"Green entrepreneurship" is a sort of sustainable business that uses more environmentally friendly manufacturing methods or environmental management tactics. This strategy involves developing new businesses that focus on the environment and natural resources, such as ecotourism and solar energy enterprises (Rofiaty et al., 2024). "Green entrepreneurship" is the act of looking for, analysing, and taking advantage of business opportunities that are good for the environment. Barragán-Hernández and Aguilar-Fernández (2024) say that green entrepreneurship is a set of activities that use new and creative ideas to solve environmental or social problems. These activities have a positive impact on the community's environment and social life, as well as on businesses. People have long thought that entrepreneurship may help companies or organisations do better (Rofiaty et al., 2019).

Several studies have demonstrated that green entrepreneurship may make businesses work better and be better for the environment (Rofiaty et al., 2024; Yi et al., 2021). According to Rofiaty et al. (2024), green entrepreneurship shows that a business is successful if it grows, makes money, and does better than its competitors. This is because firms that become involved in green entrepreneurship may be able to reach more customers, improve their brand, and connect with others who share their beliefs. This might lead to better success for the firm.

Also, green entrepreneurship is important for encouraging enterprises to come up with new green ideas. To keep making better products and developing, businesses need to be green. The link between innovation and sustainability has led to the application and understanding of green innovation (Ilesanmi, 2025). Green innovation is necessary for environmental sustainability to be achieved (Ullah & Danish, 2020). By making green goods, businesses may help reach goals for environmental sustainability. Green innovation requires more study due to the nature of many externalities and the need of sustainable development (Sharpley, 2020). The term "green innovation" refers to the development and use of new environmentally friendly products, services, technology, and business strategies. People and corporations may develop a mindset that puts environmental issues first via green entrepreneurship. This makes people think critically and creatively in order to come up with new eco-friendly items, services, processes, or procedures (Yin, Salmador, Li, & Lloria, 2022). This leads to more enterprises using green innovation.

SMEs could benefit from using eco-friendly business methods. Startups may be the ideal venues to encourage eco-innovation and bring innovative, less damaging items, services, and processes to the market (Singh, Giudice, Chierici, & Graziano, 2020). Small and medium-sized businesses (SMEs) benefit from eco-innovation since it gives them access to new markets. Eco-innovations are increasingly being used by Nigerian SMEs to increase the sustainability and competitiveness of their operations (Agarwal & Ashwani, 2018). These new ideas aim to make operations more efficient while having less of an effect on the environment. They may come in various forms, such as changes to business models, goods, and procedures. Digital platforms, for example, are being used to cut down on waste and make the most of resources. Eco-innovations, including converting agricultural waste into bioplastics, are also becoming more popular (RMRDC, 2025).

Smaller companies perceive a specific need in the market and come up with a new way to meet it, but they don't have to protect the existing markets that bigger companies do. Research projects should help eco-innovation projects and get small and medium-sized businesses (SMEs) involved. Small and medium-sized businesses (SMEs) should be encouraged to actively look for new eco-innovation possibilities, such as user-led innovation, cross-sector research, and revamping present material chains (Abu-Rumman et al., 2021). This will help with distribution and make it easier to commercialise results.

The Circular Economy is good for Nigerian small and medium-sized businesses and the economy as a whole.

- **Cost Savings:** By recycling materials, minimising waste, and making the best use of resources, small and medium-sized businesses (SMEs) may raise their profit margins and lower their operational costs (RMRDC, 2025).
- **Job growth:** Local communities may profit from the creation of jobs in areas like eco-design, recycling, remanufacturing, and rubbish collection by adopting a circular economy.
- **Environmental Sustainability:** Circular methods are particularly important in Nigeria since the country is vulnerable to environmental damage. They help reduce pollution, save resources, and stop climate change.
- **Resilience Against Resource Scarcity:** Circular practices make people less dependent on limited resources by recycling items. This makes them more resilient and less vulnerable to fluctuations in the global market (Almeida & Wasim, 2023).

- **Global Competitiveness:** By using circular economy principles, small and medium-sized businesses (SMEs) may be able to more easily enter foreign markets where sustainable practices are becoming more and more important. This will help them increase their customer base (RMRDC, 2025).

Helping small and medium-sized businesses (SMEs) in Nigeria adopt circular economy ideas might help the country become more resilient, environmentally friendly, and economically prosperous (RMRDC, 2025). With the aid of strategic partnerships, government support, and access to resources, Nigerian small and medium-sized businesses (SMEs) may transition towards a circular economy, which would provide long-term value and a sustainable future (RMRDC, 2025).

**Methods**

The research is a survey-based quantitative study. A questionnaire was made to cover the study goal and questions, and this is how data collecting is done. Google Forms were used to send out the questionnaire online. Owners of small and medium-sized businesses (SMEs) got the link via social media, namely Facebook and WhatsApp. The researcher used snowballing to send the links to people they thought might be interested. The research used 205 people who answered an online survey as its sample size. The researcher picked SMEs in Lagos state, notably in the manufacturing sector, on purpose using this strategy.

**Data analysis, Results & Discussion**

Demographic analysis

**Table 1: Profile of the participants**

Demographics	Perimeter	Participants (n=205)	
		Frequency	Percentage
Gender	Male	100	48.8
	Female	105	51.2
Highest level of education	Masters	45	22.0
	Bachelors	136	66.3

	Diploma	22	10.7
	Others	2	1.0
Are you a green entrepreneur	Yes	46	22.4
	No	29	14.1
	To some extent	97	47.3
	Not at all	33	16.1

**Survey result, 2025. Note: F (Frequency) = Number of participants that chose an option; P (Percentage) = percentage of the population that chose an option**

The participants in the study are essentially entrepreneurs from manufacturing sector of SMEs randomly. The participants constitute both male (48.8%) and female (51.2%) which implies that entrepreneurship is not gender specific. The result as presented in the table above also revealed different levels of academic achievement of the participants. This cut across Master’s degree holders (22%); Bachelor’s degree holders (66.3%); diploma (10.7) and a few participants selected others (1%). This implies that there is no benchmark academic requirement for becoming entrepreneur. So long as one has the idea, knowledge, skills, resources, etc, he or she can become entrepreneurs.

Finally, the study separated the different kinds of entrepreneurs that took part in the study. Accordingly, only 22.4% of the participants accepted that they are green entrepreneurs; 14.1% said they are not green entrepreneurs; 47.3% revealed that they are green entrepreneurs whereas 16.1% are the subject matter. This implies that there SME’s entrepreneurs have not fully embrace Green entrepreneurship and green innovation.

**What are the benefits of green innovation and eco-entrepreneurship to small and medium-sized businesses’ growth and overall performance in Nigeria?**

**Table 2: The benefits of green innovation and eco-entrepreneurship to small and medium-sized businesses’ growth and overall performance in Nigeria**

Statements	SA	A	MA	D	SD	Total % in agreement
<b>Impact of Green innovation to SMEs’ growth and performance</b>						

Small and medium-sized businesses' (SMEs') performance and growth are positively and significantly impacted by green innovation.	79(38.5%)	100(48.8%)	20(9.8%)	3(1.5%)	3(1.5%)	<b>87.3%</b>
By using eco-friendly procedures, SMEs may improve their competitiveness.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(4.0%)	<b>86.4%</b>
SMEs may increase operating efficiency by using eco-friendly strategies.	77(37.6%)	102(49.8%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>87.4%</b>
SMEs may save expenses by using eco-friendly methods.	60(29.3%)	144(70.2%)	0(0%)	0(0.0%)	1(0.4%)	<b>99.5%</b>
Through the use of eco-friendly procedures, SMEs may attain sustained viability.	79(38.5%)	100(48.8%)	20(9.8%)	3 (1.5%)	3(1.5%)	<b>87.3%</b>
SMEs may enter new markets by using eco-friendly procedures.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>86.4%</b>
<b>Impact of eco-entrepreneurship to small and medium-sized' growth and overall performance</b>						
By encouraging innovation, eco-entrepreneurship dramatically improves the expansion and general performance of small and medium-sized businesses (SMEs).	77(37.6%)	102(49.8%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>87.4%</b>
In SMEs, eco-entrepreneurship improves resource efficiency.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>97.8%</b>

In SMEs, eco-entrepreneurship enhances brand reputation.	77(37.6%)	102(41.3%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>78.9%</b>
Eco-friendly methods may improve waste management and resource utilisation.	60(29.3%)	144(70.2)	0(0.0%)	0(0.0%)	1(0.5%)	<b>99.5%</b>
Environmentally friendly operations help draw in eco-aware clients, which boosts revenue and profitability.	79(38.5%)	100(48.8%)	20(9.8%)	3(1.5%)	3(1.5%)	<b>87.3%</b>

**Source: SPSS output 2025. Note: SA=strongly agree; A=agree; Un=undecided; D=disagree; SD=strongly disagree. This is information is same with all the other tables.**

The table above indicates that eco-entrepreneurship and green innovation both have effects on the development and performance of small and medium-sized businesses. The paper concludes that because more than 70% of the people who took part agreed with the assertions in the table. So, the study agrees that eco-entrepreneurship and green innovation make small and medium-sized businesses (SMEs) more competitive, help them run more efficiently by using eco-friendly methods, save money, stay in business for a long time, enter new markets, encourage innovation, and help small and medium-sized businesses (SMEs) grow and do better overall. Using green innovation in small and medium-sized businesses (SMEs) makes better use of resources, boosts brand recognition, and helps with waste management and resource use. Eco-friendly business practices attract eco-conscious customers, which increases sales and profits.

**What are the challenges confronting the adoption of eco-entrepreneurship in SMEs Nigeria?**

**Table 3: The Challenges confronting the adoption of eco-entrepreneurship in SMEs Nigeria**

<b>1. Statements</b>	SA	A	Un	D	SD	Total % in agreement
SMEs may need to make large upfront expenditures in new technology or procedures in order to implement eco-friendly practices.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>87.4%</b>
Funding green projects may be difficult for SMEs to get,	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>97.8%</b>

particularly in their early phases of growth.						
It's possible that some SMEs lack the knowledge necessary to manage and execute eco-friendly operations successfully.	77(37.6%)	60(24.3%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>78.9%</b>
To maintain their reputation, SMEs must refrain from "greenwashing," which is deceiving customers about their environmental policies.	60(29.3%)	144(70.2)	0(0.0%)	0(0.0%)	1(0.5%)	<b>99.5%</b>
Green practice adoption is greatly influenced by SME managers' attitudes and dedication to environmental sustainability.	79(38.5%)	100(48.8%)	20(9.8%)	3(1.5%)	3(1.5%)	<b>87.3%</b>
Bureaucratic obstacles combined with inconsistent or inadequate environmental regulations might deter SMEs from implementing eco-friendly practices.	84(34.0%)	93(45.4%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>87.4%</b>
It might be difficult for SMEs to adopt sustainable practices due to inadequate waste management infrastructure, erratic power supplies, and poor road networks.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>79.4%</b>
The market for eco-entrepreneurs may be restricted by consumers' ignorance about the advantages of eco-friendly goods and services.	77(37.6%)	102(41.3%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>78.9%</b>
Eco-entrepreneurs may also find it challenging to succeed due to fierce competition from bigger businesses that do not place a high priority on sustainability.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>79.4%</b>

**Source: SPSS output 2025**

The table shows the things that make it hard for Nigerian small and medium-sized businesses to start eco-entrepreneurship. The table indicates that eco-entrepreneurship is important for small and medium-sized businesses (SMEs), but it is hard to put into practice because of a lack of money, knowledge about how to run eco-friendly businesses, and rules to guide SMEs'

operations. Small and medium-sized businesses (SMEs) may be less likely to undertake eco-friendly things if environmental standards are not clear or are not enforced, or if they have to deal with red tape. SMEs may find it hard to use sustainable practices because of bad roads, unreliable electricity, and not enough places to throw away trash. Eco-entrepreneurs may not be able to sell as many items and services since customers don't realise how good they are for the environment. Also, eco-entrepreneurs may have a hard time succeeding since they have to compete with bigger corporations that don't care about being environmentally friendly.

**What methods could be used to create effective business strategies that promote eco-entrepreneurship?**

**Table 4: Methods to create effective business strategies that promote eco-entrepreneurship**

Statements	SA	A	Un	D	SD	Total % in agreement
Granting SMEs that invest in environmentally friendly technology access to green finance, subsidies, and incentives.	77(37.6%)	102(49.8%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>87.4%</b>
Programs for technical support and training to help SME managers and owners become more knowledgeable and proficient.	84(41.0%)	93(45.4%)	20(9.8%)	4(2.0%)	4(2.0%)	<b>97.8%</b>
To promote sustainable behaviours, laws should be streamlined and complementary policies should be created.	77(37.6%)	102(41.3%)	20(9.8%)	4(2.0%)	2(1.0%)	<b>78.9%</b>
Educating customers and highlighting the advantages of environmentally friendly goods and services.	60(29.3%)	144(70.2)	0(0.0%)	0(0.0%)	1(0.5%)	<b>99.5%</b>
Putting money into building infrastructure to encourage sustainable behaviours	79(38.5%)	100(48.8%)	20(9.8%)	3(1.5%)	3(1.5%)	<b>87.3%</b>

**Source: SPSS output 2025.**

Given that 70–100% of respondents agreed with the assertions in table 4 above, this research comes to the conclusion that the following actions or approaches may be taken to increase the uptake of eco-entrepreneurship and green innovation in Nigerian SMEs: providing green loans, subsidies, and incentives to SMEs that make investments in eco-friendly technologies.

Programs for technical assistance and training should also be available to help SME owners and managers advance their skills and expertise. Once again, legislation should be simplified and corresponding policies should be developed to encourage sustainable practices. educating consumers and emphasising the benefits of eco-friendly products and services. Lastly, investing in infrastructure development to promote sustainable practices.

**Hypothesis**

**H1:** Green innovation has significant impact on SMEs performance

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	820.000 <sup>a</sup>	16	.000
Likelihood Ratio	438.015	16	.000
Linear-by-Linear Association	204.000	1	.000
N of Valid Cases	205		

a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .04.

The result presented in the table shows that the p-value (0.000) is less than the critical value (0.05). As a result, the alternative hypothesis is accepted which implies that green innovation has significant impact on SME’s performance.

**H1:** Eco-entrepreneurship have significant impact on SME’s growth

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	614.361 <sup>a</sup>	16	.023
Likelihood Ratio	455.752	16	.035
Linear-by-Linear Association	203.040	1	.032
N of Valid Cases	205		

a. 9 cells (60.0%) have expected count less than 5. The minimum expected count is .02.

The result presented in the table shows that the p-value (0.023) is less than the critical value (0.05). As a result, the alternative hypothesis is accepted which implies that eco-entrepreneurship has significant impact on SME's performance.

## **Discussion**

The research reveals that eco-entrepreneurship and green innovation are very important for the development and success of SMEs. So, eco-entrepreneurship and green innovation might be good for SMEs. The results of this research back with what Shahzad et al. (2020) found in their study. Accordingly, green innovation helps companies do better by cutting costs and making procedures easier. SMEs may get new ideas, use their resources better, and improve their brand image via eco-entrepreneurship (Barragán-Hernández & Aguilar-Fernández, 2024). Environmentalism may help you save money by using resources more efficiently and making less trash. They may get customers who care about the environment, which would increase sales and profits (Rofiaty et al., 2024). In regions where sustainability is becoming increasingly important, eco-entrepreneurship may help a firm seem better and be more competitive. Eco-entrepreneurship promotes environmentally friendly goods, services, and business practices, giving businesses new ideas and a competitive advantage (OECD, 2025). SMEs may save a lot of money by using better ways to deal with waste and get the most out of their resources. This means lowering the costs of energy and raw materials. Customers that care about the environment purchase from eco-friendly enterprises more often (Zulkiffli et al., 2022). Being eco-friendly may help a business's image and bring in consumers, partners, and investors who care about the environment. Eco-entrepreneurship might help firms find new clients who care about the environment and other green enterprises (Skordoulis et al., 2022). People are drawn to firms that care about the environment because of policies that help the environment. Eco-entrepreneurship might help small and medium-sized businesses (SMEs) by giving them additional tools to deal with changing market needs and environmental rules (Singh et al., 2020; Rustiarini, 2022). By showing that they care about the environment, SMEs may be able to deepen their links with consumers, investors, and communities (Yi et al., 2021).

As they try to be eco-friendlier, Nigerian small and medium-sized businesses run into a lot of issues. Some examples include not having enough money, not knowing how to live a healthy life, not having the right facilities, and not being able to get legal help. SMEs also have trouble putting eco-friendly ideas into action. They could not have the right administrative or technical skills (Ilesanmi, 2021).

## **Conclusion and recommendations**

The findings of this research show that eco-entrepreneurship and green innovation are very important for the growth and development of SMEs. The study reveals that green innovation and eco-entrepreneurship are intimately linked. It also shows that small and medium-sized businesses (SMEs) may considerably benefit from using sustainable practices, which can help them expand, make more money, and improve their overall performance. These tactics need to be the most important ones for SMEs to be successful in the long term.

Based on this result, it is imperative to improve awareness of the benefits of eco-entrepreneurship and providing SMEs with the information and training they need should be a major priority. The study found that green innovation and eco-entrepreneurship are important for the growth and success of small and medium-sized businesses (SMEs). It also suggested that SMEs should invest in sustainability and eco-entrepreneurship because it is the right thing to do and because it will help them succeed in the long run. This study is important because SMEs may enhance their reputation, develop new business opportunities, and help make the future more sustainable by becoming green.

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