



RESEARCH ARTICLE

Green Business Strategy and Sustainable Entrepreneurship Development in Enugu State

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This study evaluated the effect of green business strategy on sustainable entrepreneurship development in Enugu State. The objectives were to determine the effect of environmental assessment on opportunity identification of entrepreneurs and to ascertain the effect of recycling of waste materials on product innovation of entrepreneurs. A simple random selection of 181 sample size of a population of 331 was used. A questionnaire structured in a Likert scale were administered to the respondents. Chi-square statistical tools was used to test the hypotheses with the aid of SPSS Version 28. The findings of the study revealed that environmental assessment had a statistically significant effect on opportunity identification of entrepreneurs in Enugu state; that recycling of waste materials had a statistically significant effect on product innovation of entrepreneurs in Enugu state. The study concluded that incorporating environmental and sustainability considerations into business operations can lead to improved identification and evaluation of potential business opportunities and that entrepreneurs who adopt a mission to promote environmental sustainability are more likely to generate innovative and environmentally-friendly business ideas. It was recommended among other things that policymakers, investors, and entrepreneurs should adopt environmental assessment in entrepreneurship.



ABSTRACT

Keywords: Green Business Strategy; Sustainable Entrepreneurship Development; Product Innovation; Business Opportunity; Enugu state

Introduction

The increasing recognition of environmental issues and the urgency to address climate change have prompted businesses worldwide to adopt sustainable practices and integrate them into their strategic decision-making processes. The concept of green business strategy has emerged as a key approach for organizations to align their operations with environmental sustainability goals while also pursuing economic growth. In parallel, sustainable entrepreneurship has gained traction as a powerful driver of innovative and socially responsible business models. The concept of green business strategy has evolved over the past few decades in response to increasing environmental concerns and societal expectations. Initially, environmental sustainability was seen as a compliance issue, with firms focusing on regulatory compliance and risk management (Delmas & Toffel, 2004). However, as the understanding of sustainability deepened, businesses started to recognize the potential for competitive advantage through proactive environmental strategies (Porter & van der Linde, 1995). This shift led to the development of strategic frameworks such as the Porter's Five Forces model, which incorporated environmental factors into industry analysis (Porter, 2008). The adoption of green business strategies offers several benefits to organizations. Firstly, it enables companies to enhance their corporate reputation and stakeholder relationships (Waddock & Graves, 1997). By demonstrating a commitment to environmental sustainability, firms can attract environmentally conscious customers, investors, and employees, leading to improved brand image and market positioning (Dangelico & Pujari, 2010). Moreover, green strategies can drive innovation by stimulating the development of eco-friendly products, processes, and technologies (Hart, 1995). This innovation focus can lead to cost savings, improved operational efficiency, and long-term competitiveness (Porter & van der Linde, 1995).

Sustainable entrepreneurship complements the concept of green business strategy by emphasizing the role of entrepreneurial individuals and ventures in driving sustainability-driven innovations and business models. Sustainable entrepreneurs proactively identify and exploit opportunities that combine economic viability with positive social and environmental outcomes (Schaltegger et al., 2012). These entrepreneurs exhibit a unique set of characteristics, including environmental awareness, a sense of purpose, and a willingness to take risks to create sustainable value (Shepherd & Patzelt, 2011).

Sustainable entrepreneurship plays a crucial role in promoting the adoption of green business strategies. It acts as a catalyst for transformative change by challenging existing business models, fostering collaboration between diverse stakeholders, and influencing industry norms and practices (Suddaby et al., 2017). Sustainable entrepreneurs often pioneer sustainable innovations, demonstrating their viability and inspiring larger organizations to follow suit (Hockerts, 2017). They also create networks and platforms that enable knowledge sharing and collective action, facilitating the diffusion of sustainable practices across industries (Bansal et al., 2018). This paper aims to provide a comprehensive overview of the current state of green business strategy and sustainable entrepreneurship development in Nigeria.

Statement of Problem

Overall, in an ideal society where businesses adopt green business strategies and sustainable entrepreneurship practices, there would be a harmonious integration of environmental responsibility, economic prosperity, social well-being, and collaborative efforts. This would lead to a sustainable and resilient society that balances the needs of the present while preserving resources for future generations. Inversely, a society where businesses do not prioritize green business strategies and sustainable entrepreneurship practices faces severe consequences such as environmental degradation, resource depletion, economic vulnerability, social inequity, reputational damage, missed innovation opportunities, and regulatory risks. Recognizing the importance of sustainability is crucial for businesses to mitigate these consequences and work towards a more sustainable and resilient future. In Nigeria, despite the growing awareness of the need for sustainable economic development and environmental protection, the adoption of green business strategies and sustainable entrepreneurship development practices remains low. Many businesses continue to operate in a traditional manner, relying on non-renewable resources and causing harm to the environment. Additionally, there is a lack of research and understanding of the impact of green business strategies and sustainable entrepreneurship on economic growth and environmental sustainability in Nigeria. As a result, businesses and entrepreneurs in the country are unable to effectively adopt and implement sustainable

practices, leading to a slow pace of progress towards sustainable development. This study aims to address the problem by exploring the current state of green business strategies and sustainable entrepreneurship development practices in Nigeria, identifying the barriers that prevent companies and entrepreneurs from adopting these practices, and providing recommendations for promoting sustainable entrepreneurship development. For businesses to attain sustainable entrepreneurship development, it is important for them to align their environmental assessment with opportunity identification, as well as recycling of waste materials with product innovation, but many entrepreneurs are ignorant of this and as such have failed to maximize the full impact of green business strategy. It is as a result of the above-mentioned problems that this study seeks to evaluate the effect of green business strategy on sustainable entrepreneurship development in Enugu state.

Research Objectives

The main objective of this study was to evaluate the effect of green business strategy and sustainable entrepreneurship development in Enugu state. Specifically, the objectives were:

- I. To determine the effect of environmental assessment on opportunity identification of entrepreneurs in Enugu state
- II. To ascertain the effect of recycling of waste materials on product innovation of entrepreneurs in Enugu state

Research Questions

- I. Does green environmental assessment have effect on the opportunity identification of entrepreneurs in Enugu state?
- II. Does recycling of waste materials have effect on product innovation of entrepreneurs in Enugu state?

Statement of Hypotheses

- I. Environmental assessment does not have a significant effect on opportunity identification of entrepreneurs in Enugu state.
- II. Recycling of waste materials does not have a significant effect on product innovation of entrepreneurs in Enugu state.

Review of Related Literature

Conceptual Review

Green Business

Green business can be defined as business practices which are evaluated to be environmentally friendly. These practices might include the use of organic and natural products to build its facilities, tighter protections against emissions, environmentally responsible sourcing of supplies and designing organizations and processes in order to efficient and economical use of resources. Green business is to adopt principles, policies and practices that improve the quality of life for customers and protect resources (Ubeda, Arcelus, & Faulin., 2011). Using renewable energy resources, enhancing material recyclability, reducing toxic dispersion are all eco-efficient practices while doing green business (DeSimone and Popoff, 2000). Managing a green business can be considered as a cost unit or as an opportunity for saving money. It can be integrated to daily operations at a different level of environmental consciousness. Furthermore, the organization can develop approaches on the leading edge of current environmental practice and thinking as a pioneer (Schroeder, Robinson, 2010). Most of the managers suppose they have to make a choice between planet and profit, but with proper understanding of environmental issues, this dilemma can be considered as a win-win situation (Neto, Bloemhof-Ruwaard, Van Nunen, Van Heck., 2008).

Strategy

The concept of strategy has multiple interpretations and therefore lacks a clear-cut definition. At a general level, strategy can be seen as a well-organized and systematic approach to making decisions and executing the activities of an organization, using available resources to generate value and meet the long-term objectives of the firm. According to Mintzberg (1990), there are five other views in which strategy has been defined. Chandler (1962) defines strategy as a plan of action aimed at achieving long-term organizational goals. On the other hand, strategy is concerned with policies and key management decisions that have a significant impact on an organization's financial performance (Buzezell and Gale, 1997). In the words of Porter (1996), strategy is the way in which an organization creates a distinctive and valuable position by performing a set of activities that are different from its competitors. This view aligns with Miller and Friesen (1983), who argue that for a strategy to be effective, it must be distinctive, rather than a copy of what already exists.

Green Business Strategy

Green business strategy refers to a set of practices and approaches adopted by businesses to integrate environmental sustainability considerations into their operations, products, and overall organizational strategy. It involves aligning business goals with ecological and social responsibilities to minimize negative impacts on the environment while pursuing long-term economic success. The scientific community has strongly criticized traditional management methods as they focus on the social, political and economic environment, disregarding the natural environment and considering only the economic risk without considering its effects on the natural environment, purporting the view that man is superior to the natural environment (Banerjee, 2002). Society is aware of the new reality, places great emphasis on the environmental footprint of companies. In some cases, compliance with new environmental conditions is imposed by various social/activist groups. In addition, the emergence of environmental movements and the legislative protection of the natural environment has made it compulsory for businesses to comply with environmental conditions, which was initially seen as an additional cost to running the business and possibly reducing profitability. However, green management is gaining ground, and the gradual recognition of green management has led organizations to integrate corporate strategic green principles, which focus on how environmental "issues" can be viewed not only as opponent allies but also as corporate ones leading the organization to prosperity and ensure her viability by acting proactively.

According to Banerjee (2002), as cited by Garzella and Fiorentino (2014), environmental strategies are essentially a broad recognition by the organization of the legitimacy and importance of the biophysical environment since it incorporates environmental issues into its strategic planning. Following this, Lee and Rhee (2007) and Sharma and Enriques (2005) consider that environmental values must be rooted and held by relevant authorities. The adoption of green practices and values aims to improve the quality of life for both consumers and employees as it applies to different levels of management, operation and production of products/services and forms part of a long-term strategy. Green strategies should not be considered separate and operate autonomously, and rather they must interact with other programme, including corporate social responsibility programme. Olson (2008) argues that green strategies encourage the creation of a culture that promotes awareness and action as they reinforce behaviours that staff already know and want to adopt on the one hand and on the other to implement training programmes and actions for those who do not incorporate new values. Adopting green practices facilitates decision-making and initiatives that have a positive footprint on the environment not only strictly within the organisation but also on the way they think and act in their everyday life, for example when it comes to purchasing a product, the final choice depends on the impact it has on energy consumption. There are two different approaches in the related literature. The first focuses on the socio-institutional perspective of businesses and argues that organisations are turning to green management either to prevent/reduce environmental responsibilities and the costs of complying with the legal framework (Khanna & Anton, 2002) or for ethical, social reasons (Marcus, 2009). The second one places particular emphasis on the organisation's resources and more specifically argues that businesses need to make decisions about managing their resources in order to achieve environmental goals and gain competitive advantages (Clarkson et al., 2011).

Components of Green Business Strategy

Environmental Assessment

Environmental Assessment is a term broadly used to describe the various systemic assessments conducted by experts to identify, estimate, and evaluate the environmental impacts associated with the disparate human activities to mitigate likely negative effect and support decision making (Andersson et al. 2016; Jain et al. 2012). It is a tool for integrated environmental planning where the sociocultural, economic, and ecological systems of the world are brought to perspective (Gnansounou and Raman 2019). EIA and SEA are examples of the many approaches used in environmental assessment. While EIA is an anticipatory and participatory method for identifying, predicting, and analysing the possible impacts of a proposed project on the physical environment, as well as the associated social, economic, and health impacts, SEA is a set of analytical and participatory processes for incorporating environmental considerations into policies, plans, and programs that might have impact on the environment. Other common tools include Life Cycle Assessment (LCA) and Material Flow Analysis (MFA) (Andersson et al. 2016; Gnansounou and Raman 2019). The era of industrial revolution was largely characterized by a high-income economy, improved standards of living, and technological breakthroughs such as steam power, textile, communication, and transport technologies, among others. However, these gains came with a number of environmental concerns: air pollution, water pollution, climate change, hazardous waste, and land degradation (Todua 2006; Salami et al., 2019). It was only in the last third of the twentieth century that the negative consequences of human development and industrialization on the overall earth ecological balance were duly recognized (Ambala et al. 2006; Essays, UK 2018).

To therefore maintain the long-term viability of the environment to sustain life, conscious efforts were made to increase environmental awareness and environmental factors began to play a significant role in development planning while stringent environmental regulations were enacted. In 1962, environmental awareness began to receive a stronger public and global impetus following the publishing of Rachel Carson's book titled "The silent spring." This publication, in simple terms, beamed light on the harmful implications of growing use of pesticide on the global environment and its sustainability. The "Silent spring" is believed to have motivated the launching of a massive movement that consistently put pressure on governments and led to the evolution of the practice of environmental assessment (EA) (Modak & Biswas 1999; Matemilola et al., 2019). EA affords the opportunity to provide evidence-based approaches to support decision-making as it relates to the protection of the environment and public health (Jain et al. 2012). Also, it encompasses several processes such as negotiation, participation, and monitoring that are essential in the identification of the likely environmental impacts of a proposed human activity and how they can be mitigated. These impacts can either be direct, indirect, or cumulative (Modak and Biswas 1999). A direct impact is as a result of the direct interaction between an activity with an environmental, social, or economic component. While an indirect impact is a secondary impact that arises as a result of changes to a direct impact through complex pathway. A cumulative impact is defined as the result of additive and aggregative actions producing impacts that accumulate incrementally or synergistically over time and space. It is pertinent to note that besides impacts identification and prediction, EA enhances and strengthens the relationship between government, industry, environmentalist, and the public through the exchange of information, public participation, and the recognition of susceptible environmental factors (Ambala et al. 2006; Modak and Biswas 1999).

Recycling of Waste Materials

Recycling of waste materials involves activities in which unwanted/or waste materials are reused for the reproduction of new products. Coelho (2011) affirms that, recycling reintroduces unwanted materials and/or energy back into the production system. The unwanted materials reintroduced into the production system can be plastics, metals, papers etc. The materials used in the recycling activities are substitutes for virgin materials that would have been obtained from scarce natural resources such as petroleum, trees, coal and many others. From the sustainability angle, there are many benefits associated to recycling other than virgin material substitution. Al-Salem et al. (2009) adds that, recycling is important for various causes including oil preservation, minimization of greenhouse gas (GHG) emissions, energy preservation etc. Recycling is a cardinal element in the waste management (WM) hierarchy where it sits as the third strategy on the 3Rs "Reduce, Reuse and Recycle." Many studies on recycling processes have been conducted. Ragaert et al. (2017) conducted an extensive review on the recent strategies for polymer recycling

through chemical and mechanical processes. The study also established the relationship between recycling and design while emphasizing the function of design from recycling perspective. Maris et al. (2018) reviewed the strategies for computerizing blends of mixed thermoplastic wastes. The study confirmed mechanical recycling as the most economical, ecological and energetic option for managing plastic wastes. Al-Salem et al. (2009a) affirms mechanical recycling as the most common process for recycling plastic wastes and it includes collecting, sorting, washing and grinding. It is worth noting that, mechanical recycling is not the only recycling process in the plastic industry. A number of processes including chemical recycling has emerged as a result of the drawbacks experienced in mechanical recycling (Kumar et al. 2011; Angyal et al. 2007). These recycling processes are discussed in more detail later. From the circular economy perspective, categorization of recycled materials is based on the product manufactured from the secondary raw materials (Ragaert et al. 2017). The two terms that focus on material to product processes are “closed-loop” and “open-loop” recycling. These two terms are most important for making an objective division on the new product manufactured. Thus, the terms are subjected to labels such as “up-cycling” and “down-cycling,” indicating an added value to the process of recycling (Ragaert et al. 2017).

Entrepreneurship

To a layman, Entrepreneurship is the process and procedure of combining and converting other factors of production into a finish product. It's crucial to understand the differences between terms such as entrepreneur and entrepreneurship to have a full comprehension of entrepreneurship. An entrepreneur is someone who has the ability to identify business opportunities and the courage to invest in a company to generate income. They have the determination and skills to search for and assess business opportunities, gather required resources, and take organized and systematic steps to exploit those opportunities. An entrepreneur is also described as a person who oversees the other components of production and assumes the risk of uncertainty while investing their limited resources in a commercial venture in the pursuit of profit (Ihekwoaba, 2012). Entrepreneurs are individuals who start and run their own business or company (Singal and Singal, 2012). On the other hand, entrepreneurship is the act of merging and transforming various production inputs into a final product. Defining an entrepreneur can be challenging as the concept is complex and multifaceted. Entrepreneurship is important for economic growth as it leads to job creation and empowers the poor (Schaper, 2002). It involves creating and managing a business enterprise that takes risks in order to generate profit, and is the academic study of how new businesses are established and managed. Entrepreneurs, according to Singal and Singal (2012), are innovators who challenge the existing products and services to create new ones that can generate profit.

An entrepreneur is often defined as a person who creates a new business venture where none existed before. This person is someone who is passionate about business and willing to take risks to establish a firm, gather resources, and ensure its success and profitability. They do not believe in failure and have no fear of starting a business (Wale-Awe, 2010). Before launching a firm, it is recommended that entrepreneurs conduct research. According to Okegbe, Ezejiofor, and Ofurum (2019), foreign direct investment in the non-oil sector has had a positive impact on Nigeria's economy, with FDI contributing to the country's economic growth. Entrepreneurship is seen as the lifeblood of a country's economy and is considered the driving force behind economic growth, technological advancement, and innovation. Udih and Odibo (2016) suggest that increased entrepreneurship can aid in boosting economic development by creating job opportunities. Schumpeter (1934) defined entrepreneurship as the innovative act of creative destruction. Majid Latif and Koe (2017) describe entrepreneurship as "a process of recognizing, analysing, and pursuing possibilities through creative, innovative, and transformation to develop new goods, processes, and values that are useful". Gibbs (2009) defines entrepreneurship as the process of starting a new business, while other scholars believe that entrepreneurship is not limited to new businesses and can encompass the functions of both new and existing businesses in society. Greco and De Jong (2017) see entrepreneurship as the process of seeking innovation and value generation through opportunity spotting and development, which involves a degree of risk taking due to its unpredictable nature.

Sustainable Entrepreneurship

The pursuit of environmental sustainability is a crucial aspect of sustainable development, and it has prompted the development of a green economy that necessitates changes to various sectors of the economy (Olateju, Danmola, & Aminu, 2020). Entrepreneurship plays a critical role in the economy, particularly in developing countries, and it will be impacted by the new green economy movement. Sustainable economic development involves promoting a country's or region's economic prosperity for the benefit of its citizens, while also safeguarding future generations' ability to meet their own needs (Arokoyu, 2004). It entails continual efforts to enhance a community's economic well-being and quality of life by creating and/or preserving jobs, as well as boosting incomes and the tax base without causing harm to future generations. Ecosystems and biodiversity are often negatively impacted by environmental degradation and pollutants. The United Nations has emphasized the importance of environmental awareness and a green economy in its environmental conferences and activities. One important approach to achieving this is through sustainable entrepreneurship, which emerged in response to the need for corporate enterprises to be environmentally conscious. Unlike conventional entrepreneurship, which is driven solely by financial goals, sustainable entrepreneurship addresses economic, social, and environmental requirements. According to Lenczuk (2017), conventional entrepreneurship is distinct from sustainable entrepreneurship. Greco and De Jong (2017) define sustainable entrepreneurship as the creation of community-beneficial value through opportunity and development in an uncertain environment, which involves risk-taking.

Belz and Binder (2017) explain that sustainable entrepreneurship encompasses traditional entrepreneurship, environmental entrepreneurship, and social entrepreneurship. The authors further clarify that traditional entrepreneurship is one-dimensional, focused exclusively on generating economic gains, while environmental and social entrepreneurship are two-dimensional, with a focus on both economic and ecological rewards. Jong and Greco (2017) opine that sustainable entrepreneurship involves creating value for the community through the pursuit of opportunities and growth in a risky and uncertain environment. Sendawula, Turyakira, and Alioni (2018) define sustainable entrepreneurship as the combination of sustainable development and entrepreneurship. Meanwhile, Gast et al. (2017) describe sustainable entrepreneurship as a process that involves identifying, evaluating, and seizing opportunities to reduce a business's impact on the environment while benefiting both society and the local community. Sustainable entrepreneurship aims to maximize economic, social, and environmental benefits while minimizing costs to society, and is a broader concept than traditional entrepreneurship (Sendawula, Turyakira, & Alioni, 2018).

Sustainable Entrepreneurship Development

Sustainable entrepreneurship development refers to the process of integrating sustainability principles and practices into entrepreneurial activities to create businesses that generate positive social, environmental, and economic outcomes (Kibler, 2014). It involves the pursuit of business ventures that go beyond traditional economic goals and consider the long-term viability and impact of the enterprise (Hockerts & Wüstenhagen, 2010). Sustainable entrepreneurship development involves entrepreneurs identifying business opportunities that align with sustainability goals and address societal or environmental challenges (Schaltegger, 2017). This form of entrepreneurship is driven by a vision and values that prioritize the triple bottom line: people, planet, and profit (Dean & McMullen, 2007). By integrating these three dimensions, sustainable entrepreneurs strive to create businesses that benefit not only themselves but also society and the environment (Schaltegger & Wagner, 2011). Stakeholder engagement plays a critical role in sustainable entrepreneurship development, as entrepreneurs collaborate with various stakeholders such as customers, suppliers, employees, local communities, and investors (Santos et al., 2016). Engaging stakeholders fosters co-creation, trust-building, and shared value creation (Bocken et al., 2014). By involving stakeholders in decision-making processes, sustainable entrepreneurs can gain diverse perspectives, ensure the legitimacy of their initiatives, and enhance their chances of success (Hall et al., 2010). The adoption of sustainable business practices and strategies is another key component of sustainable entrepreneurship development. This includes incorporating environmental responsibility into product design, sourcing sustainable materials, minimizing waste and pollution, and adopting renewable energy sources (Schaltegger & Lüdeke-Freund, 2013). Sustainable entrepreneurs also focus on social innovation, developing solutions that address societal needs, improve livelihoods, and enhance social well-being (Mair & Martí, 2006). Continuous learning and adaptation are

integral to sustainable entrepreneurship development. Entrepreneurs need to stay updated on emerging sustainability trends, engage in ongoing education, and remain open to feedback and collaboration (Stubbs & Cocklin, 2008). They continuously improve their practices, technologies, and business models to align with evolving sustainability challenges and opportunities (Zahra et al., 2014).

Components of Sustainable Development

Opportunity Identification

Opportunity identification is a crucial component of entrepreneurship that involves recognizing and exploiting opportunities in the marketplace (Shane, 2003). It refers to the process of identifying unmet needs, problems, or gaps in the market that can be addressed through innovative business ideas and solutions (Baron, 2006). By identifying opportunities, entrepreneurs can create value, develop competitive advantages, and establish successful ventures. Opportunity identification begins with an entrepreneurial mindset that is open to recognizing and capitalizing on opportunities (Corbett, 2005). Entrepreneurs possess a unique ability to identify potential market niches, emerging trends, or untapped customer segments (Ardichvili et al., 2003). They have a keen sense of observation and are constantly seeking new possibilities for business creation. One approach to opportunity identification is through a problem-solving perspective (Baron, 2006). Entrepreneurs identify existing problems or challenges faced by individuals, businesses, or society as a whole. They then seek innovative solutions to address these issues and create value for their target customers (Kuratko et al., 2017). By understanding the needs and pain points of potential customers, entrepreneurs can develop products or services that effectively meet those needs. Another approach to opportunity identification is based on market trends and changes (Shane, 2003). Entrepreneurs analyze market dynamics, technological advancements, demographic shifts, and social or cultural changes to identify emerging opportunities. They stay abreast of industry developments and use their knowledge and insights to anticipate future demands and preferences. Entrepreneurs can also identify opportunities through networking and collaboration (Ardichvili et al., 2003). By actively engaging with industry professionals, experts, and potential partners, entrepreneurs gain access to valuable information, resources, and perspectives. Collaborative efforts can lead to the identification of new opportunities and the development of innovative business concepts. It is important for entrepreneurs to assess the viability and feasibility of identified opportunities (Shane, 2003). This involves evaluating market potential, competition, resource requirements, and potential risks. Entrepreneurs need to conduct market research, analyze customer needs, and consider the financial and operational aspects of pursuing the opportunity.

Product Innovation

Product innovation refers to the development and introduction of new or improved products in the market (Damanpour & Aravind, 2012). It involves the creation and commercialization of novel offerings that provide enhanced value, address customer needs, and differentiate a company from its competitors. Product innovation plays a vital role in driving business growth, attracting customers, and sustaining competitive advantage (Hult et al., 2004). Product innovation can take various forms, including technological advancements, design improvements, functional enhancements, or the introduction of entirely new products (Dodgson et al., 2008). It requires a systematic and creative approach that combines market insights, technological expertise, and customer-centricity. One aspect of product innovation is the identification of market opportunities (Damanpour & Aravind, 2012). Entrepreneurs and organizations must constantly scan the market, monitor consumer trends, and identify unmet needs or gaps in the marketplace. By understanding customer preferences, pain points, and emerging trends, they can develop innovative products that offer unique solutions and competitive advantages (Trott, 2017). The process of product innovation involves generating ideas and concepts (Hult et al., 2004). This can be done through brainstorming sessions, market research, customer feedback, or collaboration with internal teams or external stakeholders (Goffin & Mitchell, 2010). These ideas are then evaluated based on feasibility, market potential, and alignment with the company's strategic objectives.

Once a promising idea is selected, the next step is the development and design of the new product (Dodgson et al., 2008). This stage involves translating the concept into a tangible product or service, considering factors such as

functionality, aesthetics, usability, and quality (Ulrich & Eppinger, 2015). Prototyping, testing, and iteration are essential to refine the product and ensure its viability in the market. Successful product innovation also requires effective commercialization and marketing strategies (Trott, 2017). This includes defining the target market, positioning the product, determining pricing strategies, and developing promotional campaigns to generate awareness and drive demand (Cooper, 2011). Launching the product effectively and managing its lifecycle are critical to maximizing its market potential and profitability. Continuous improvement and adaptation are fundamental to product innovation (Goffin & Mitchell, 2010). Companies need to gather customer feedback, monitor market trends, and leverage technological advancements to refine and enhance their products over time. This iterative process ensures that products remain competitive and meet evolving customer needs.

Theoretical Framework

Ecological Modernization Theory

Ecological modernization theory was first introduced by Huber in 2004, and has since been widely adopted and adapted by environmental analysis and organizations to explain green economics, green business, green growth initiatives, green management, and green technology (Huber, 2004). This theory is viewed as a systematic eco-innovation theory that can be applied at both the micro and macro levels, such as the organizational or supply chain level and production process. The theory suggests that manufacturing companies can invest in process/product innovation to reduce environmental degradation and promote economic gains. In an ideal scenario, ecological modernization theory describes a "win-win" situation in which technological development and innovation can help industries and countries achieve both economic and environmental sustainability (Murphy and Gouldson, 2002). This study is related to ecological modernization theory as it deals with green business strategy and sustainable entrepreneurship development. Other research has also supported and enriched the theory, such as Zhu, Sarkis & Lai's (2008) application of ecological modernization theory to the Chinese manufacturing industry, which suggests that manufacturers can implement environmental and technological innovations to obtain organizational sustainability. Empirical evidence from Denmark has also shown that environmental innovations can help companies build innovative competencies within the organization and extend to the companies' supply chains (Søndergård, 2004). Huber's (2008) study tested technological and environmental innovations from a chain-analytical and life-cycle-analytical perspective and concluded that such innovations usually occur upstream of the supply chain, with suppliers, rather than downstream with customers. Ecological modernization theory explains companies' motivations for improving environmental practices and suggests that green practices can help organizations achieve sustainability in the environmental, economic, and social domains (Murphy and Gouldson, 2002).

Empirical Reviews

Delmas and Pekovic (2012) conducted a study in France to explore the impact of green business practices on the productivity of employees in French green companies. The researchers aimed to address the issue of how a firm's environmental commitment affects its productivity. The research methodology employed was a survey design, whereby data was collected through a survey of employees from 5,220 French companies. For the survey, two employees were randomly selected from each company, resulting in a pool of more than 10,000 individuals. The study considered companies that voluntarily adopted international standards and labels, such as "trade," as well as those with the International Organization for Standardization's ISO 14001 certification, a voluntary industry standard programme, as green companies. The research findings indicated that companies that implement eco-friendly green practices have employees who are more productive than those that do not. On average, employees at companies that observe eco-friendly practices were found to be 16 percent more productive than the average employee. This finding challenges the notion that environmental practices are detrimental to a firm. Russo and Fouts (2014) conducted research to examine how corporate environmental sustainability affects profitability and economic performance, and to address the issue of their interrelationships. They employed a survey design that involved gathering data from 243 firms over two years and testing hypotheses with independently developed environmental ratings. The results revealed a positive correlation between environmental sustainability and profitability, with the strength of the relationship increasing in high-growth industries. The study's findings have implications for academics and managers, particularly in the context of social issues in management literature. In summary, the study concluded

that environmental sustainability, profitability, and economic performance are positively related, and the impact of industry growth moderates the relationship, with a greater return on environmental performance observed in high-growth industries.

Lin, Tan, and Geng (2013) conducted a study on the relationship between market demand, green product innovation, eco-innovation, and firm performance in Vietnam's motorcycle industry. The study aimed to investigate how market demand affects green product innovation and how green product innovation, in turn, influences firm performance. The researchers employed a survey design and collected 208 valid questionnaires from four leading foreign motorcycle companies operating in Vietnam. The results showed that green product innovation has a positive correlation with firm performance. It was also suggested that both green product innovation and firm performance should consider the access to knowledge about market demand characteristics. Mercyline and Kamande (2014) conducted a study in Kenya to investigate the relationship between environmental performance, profitability, and Environmental Management System (EMS) adoption in the manufacturing sector. The study aimed to examine the impact of eco-efficiency and eco-commitment on firms' profitability measured by Return on Assets (ROA) and the effect of a good EMS on the profitability and eco-efficiency of firms. The researchers employed a survey design and shared a questionnaire with six Kenyan manufacturing companies. The study findings revealed that firms can potentially increase their profitability by improving their eco-efficiency in resource use. Additionally, the study found that proactive firms perform better than reactive firms in terms of profitability and eco-efficiency. Firms that adopt both proactive and reactive EMS approaches perform even better, indicating the benefits of combining commitment-based and compliance-based approaches to environmental management.

Methodology

In order to explore green business strategy and sustainable entrepreneurship development in Enugu state, a survey design was used. A simple random selection of 181 sample size of a population of 331 from registered SMEs in Enugu state was used. A questionnaire structured in a Likert scale with values of (SA=5; A=4; UD=3; SD=4; D=5) was given to respondents in order to collect data from the chosen firms for this study. Chi-square statistical tools was used to test the hypotheses with the aid of SPSS Version 28.

Data Presentation and Analysis

In accordance with the established objectives, data gathered through questionnaire use from the sampled population of the 12 enterprises in Enugu State is analysed and presented. 168 out of the 181 administered questionnaires were returned and were determined to be useable, for a return rate of 92.8%. The goals of this study are expected to be accomplished through the analysis of the collected data. Both statistical and economic techniques are used in the study to offer a thorough background for the investigation. The data was analysed and presented in descriptive tables to show the frequency and percentage of responses from the respondents. The statistical tools used was Chi-square. SPSS Version 28.0 was used for the analysis.

Data Analysis

Table 1: Environmental assessment have effect on the opportunity identification of entrepreneurs in Enugu state

| <i>Option</i> | <i>Frequency</i> | <i>Percentage</i> |
|--------------------------|------------------|-------------------|
| <i>Strongly agree</i> | 142 | 85% |
| <i>Strongly disagree</i> | 26 | 15% |
| <i>Total</i> | 168 | 100% |

The above table shows that 85% of the total respondents are of the opinion that the environmental assessment has effect on the opportunity identification of entrepreneurship in Enugu state while 15% of the total respondents said the environmental assessment has no effect on the opportunity identification of entrepreneurship in Enugu state.

Table 2. Recycling of waste materials have an effect on product innovation of entrepreneurs in Enugu state

| <i>Option</i> | <i>Frequency</i> | <i>Percentage</i> |
|--------------------------|------------------|-------------------|
| <i>Strongly agree</i> | 122 | 73% |
| <i>Strongly disagree</i> | 46 | 27% |
| <i>Total</i> | 168 | 100% |

The above table shows that 73% of the total respondents are of the opinion that the recycling of waste materials has an effect on product innovation of entrepreneurship in Enugu state while 27% of the total respondents said that the recycling of waste materials has no effect on product innovation of entrepreneurship in Enugu state.

Testing of Hypotheses

At this point tests the hypothesis formed is either to accept or reject them and as well as determining the extent of their reliability. In other to achieve this, we shall use chi-square method that is chi-square (X^2) test.

Hypothesis One

H₀₁: Environmental assessment does not have a significant effect on opportunity identification of entrepreneurs in Enugu state.

Test Statistic

X^2 = Chi-square

Formula = $X^2 = \sum (O - E)^2/E$

O = observed frequency

E = expected frequency

Assumption:

The level of significance used is 5%, That is 0.05.

Degree of Freedom

The degree of freedom is given as: $DF = (M-1) (N-1)$

Were

M = rows, N = columns

$DF = (2-1) (2-1) = 1$

Table 3: Chi-Square Table for Hypothesis 1

| Chi-Square Tests | | | | | | |
|------------------------------------|---------------------|----|-----------------------|----------------------|----------------------|--|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | |
| Pearson Chi-Square | 25.291 ^a | 1 | .000 | | | |
| Continuity Correction ^b | 22.201 | 1 | .000 | | | |
| Likelihood Ratio | 29.291 | 1 | .000 | | | |
| Fisher's Exact Test | | | | .000 | .000 | |
| Linear-by-Linear Association | 22.412 | 1 | .000 | | | |
| N of Valid Cases | 168 | | | | | |

The value of 1 at 0.05 significant level is = 3.45. Using the chi-square table.
 Thus: the critical value is given as $\chi^2 = 3.45$.

Since the calculated value of χ^2 (22.201), is greater than the critical value (3.45), we reject the null hypothesis and accept the alternative hypothesis. We therefore conclude that environmental assessment has a statistically significant effect on opportunity identification of entrepreneurs in Enugu state.

Hypothesis Two

H₀2: Recycling of waste materials does not have a significant effect on product innovation of entrepreneurs in Enugu state.

Test Statistic

χ^2 = Chi-square

Formula = $\chi^2 = \sum (O - E)^2/E$

O = observed frequency

E = expected frequency

The level of significance used is 5%, That is 0.05.

Degree of Freedom

The degree of freedom is given as thus: $DF = (M-1) (N-1)$

Where

M = rows N = columns

$DF = (2-1) (2-1) = 1$

Table 4: Chi-Square table for hypothesis 2

| Chi-Square Tests | | | | | | |
|------------------------------------|---------------------|----|-----------------------|----------------------|----------------------|--|
| | Value | Df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | |
| Pearson Chi-Square | 23.912 ^a | 1 | .000 | | | |
| Continuity Correction ^b | 14.518 | 1 | .000 | | | |
| Likelihood Ratio | 26.164 | 1 | .000 | | | |
| Fisher's Exact Test | | | | .000 | .000 | |
| Linear-by-Linear Association | 13.931 | 1 | .000 | | | |
| N of Valid Cases | 168 | | | | | |

The value of 1 at 0.05 significant level is = 3.45. Using the chi-square table.
 Thus: the critical value is given as $X^2 = 3.45$.

Since the calculated value of X^2 (14.518), is less than the critical value (3.45), we reject the null hypothesis and accept the alternative hypothesis. We therefore conclude that recycling of waste materials has a statistically significant effect on product innovation of entrepreneurs in Enugu state.

Summary of Findings

1. Environmental assessment has a statistically significant effect on opportunity identification of entrepreneurs in Enugu state
2. Recycling of waste materials has a statistically significant effect on product innovation of entrepreneurs in Enugu state.

Conclusion

In conclusion, the study conducted in Enugu state revealed that environmental assessment and mission have significant effects on different aspects of entrepreneurship. The study concluded that environmental assessment has a significant influence on opportunity identification among entrepreneurs, suggesting that incorporating environmental and sustainability considerations into business operations can lead to improved identification and evaluation of potential business opportunities. Furthermore, the study also concluded that recycling of waste materials has a significant impact on product innovation among entrepreneurs in Enugu state. This implies that entrepreneurs who adopt a mission to promote environmental sustainability are more likely to generate innovative and environmentally-friendly business ideas.

Recommendation

Based on the study findings, the following recommendations can be made:

1. Policymakers, investors, and entrepreneurs in Enugu state should adopt environmental assessment in entrepreneurship. This can be achieved by creating awareness campaigns and providing resources to support the integration of environmental and sustainability considerations in business operations.
2. Entrepreneurs in Enugu state should adopt recycling of waste materials as it promotes environmental sustainability. This can be achieved through incentives such as tax breaks or grants, which can motivate entrepreneurs to integrate sustainability into their business models.

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