



ENTREPRENEURSHIP EDUCATION AND GENDER FOR SUSTAINABLE ECONOMIC DEVELOPMENT AMONG SELF- EMPLOYED WOMEN IN NORTH WESTERN NIGERIA

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ABSTRACT

This study investigates the impact of entrepreneurship education on sustainable economic development among self-employed women in North West Nigeria, with a specific focus on the moderating role of gender. The paper is a review series that analyses relevant and related empirical articles on entrepreneurship education and gender for sustainable economic growth in the region, with keen interest on regression analysis to evaluate the relationship between access to entrepreneurship education, business growth, employment generation and moderating effect of gender-based variables. The review is restricted to formal entrepreneurship education trainings offered to women at all levels of administration, federal state and local governments with emphasis on innovation, technology and financial inclusion. In most of the studies reviewed, results revealed a significant positive correlation between entrepreneurship education and the economic empowerment of women, as measured by income levels, business expansion, and improved livelihoods as a measuring yard stick for sustainable economic development. Furthermore, gender-based factors, such as societal norms and access to resources, are found to mediate the effectiveness of entrepreneurship education. The study concludes that targeted entrepreneurship education programs, combined with policies addressing gender inequalities, can serve as a sustainable pathway to poverty reduction among self-employed women in North Western Nigeria. Recommendations include scaling up gender-sensitive entrepreneurial training and enhancing women's access to financial and institutional support systems, equitable gender-based social norms, mentorship and monitoring as well inclusive policies in national development plan.

Keywords: Entrepreneurship Education, Sustainable Economic Development
Women Regression Analysis, North-West Nigeria

1.0 Introduction

Entrepreneurship education has emerged as a powerful tool for economic transformation, fostering innovation, and addressing poverty, particularly among marginalized groups such as women. In Northwestern Nigeria, a region characterized by low literacy rates, high poverty levels, and deeply entrenched gender norms, the role of entrepreneurship education in empowering women is both critical and transformative. Self-employed women in this region often face a dual challenge of systemic poverty and gender-based barriers, which hinder their economic participation and growth. Recognizing these challenges, entrepreneurship education has been increasingly integrated into development strategies as a means of equipping women with the skills, knowledge, and confidence needed to create and sustain their businesses.

Entrepreneurship education encompasses a range of activities, including formal and informal training, mentorship programs, and skills acquisition workshops. Its goals include fostering

creativity, problem-solving skills, and financial literacy, which are essential for entrepreneurial success. In the context of Northwestern Nigeria, this approach has significant potential to address poverty, given the predominantly agrarian economy and the growing informal sector. Women's participation in these programs can lead to increased household incomes, enhanced social status, and improved community well-being, aligning with the broader objectives of sustainable development. Despite efforts to promote entrepreneurship education as a strategy for economic empowerment, self-employed women in Northwestern Nigeria continue to face significant barriers to sustainable economic development. Gender disparities in access to education, financial resources, and social support systems limit their ability to fully benefit from entrepreneurial initiatives. The extent to which entrepreneurship education influences poverty reduction and economic sustainability among these women, while accounting for gender-specific factors, remains underexplored. A regression analysis model is essential to quantify the impact of entrepreneurship education on key economic indicators such as income, business growth, and employment generation, while identifying the moderating effects of gender-based variables. This approach will provide evidence-based insights to inform policies and programs aimed at achieving inclusive and sustainable economic development in the region.

Despite its potential, the effectiveness of entrepreneurship education in the region is deeply influenced by gender dynamics. Societal norms often restrict women's access to education, financial resources, and decision-making processes, creating a gender gap in entrepreneurial opportunities. Addressing these challenges requires policies that not only promote entrepreneurship education but also tackle the systemic inequalities that limit women's participation in economic activities.

In the region, self-employed women play a pivotal role in the informal economy, yet their potential to drive sustainable economic development is constrained by inadequate access to entrepreneurship education and persistent gender disparities. While policies and programs aimed at promoting entrepreneurial skills exist, their impact on poverty reduction and economic growth remains unclear due to limited empirical analysis. Key questions remain unanswered: How does entrepreneurship education influence the economic outcomes of self-employed women, and to what extent do gender-specific factors, such as societal norms and access to finance and financial literacy moderate to impact on poverty reduction among self-employed women in the Northwestern Nigeria? It is in line with these that the study seeks to find the following objectives: To assess the impact of entrepreneurship education on the income levels of self-employed women in Northwestern Nigeria., to evaluate how entrepreneurship education influences business growth among women entrepreneurs in the region, to analyze the role of entrepreneurship education in promoting employment generation within women-led enterprises and to explore the moderating effects of gender-based variables, such as access to resources, cultural norms, and decision-making autonomy, on the relationship between entrepreneurship education and economic outcome.

2.0 Literature Review

Entrepreneurship education (EE) is recognized globally as a critical factor in fostering economic growth, empowering individuals, and creating employment opportunities, especially in developing economies like Nigeria. It encompasses pedagogical approaches designed to equip individuals with the knowledge, skills, and mindset necessary to identify opportunities, launch ventures, and manage business risks (Fayolle & Gailly, 2015). In North Western Nigeria, entrepreneurship education is particularly important due to the region's high poverty rates, limited formal employment opportunities, and significant gender disparities in economic participation. Entrepreneurship education provides women with the knowledge, skills, and attitudes necessary to engage in self-employment and microenterprise

activities, potentially enhancing their financial independence, business growth, and community contributions (Akanbi & Adejumo, 2019).

European Commission (2006) defines entrepreneurship education as the process of providing individuals with the ability to recognize commercial opportunities, self-esteem, knowledge, and skills to act on them (European Commission, 2006). Kuratko (2005) emphasizes that entrepreneurship education is a discipline that prepares individuals to undertake value-creation activities through the development of opportunity recognition, resource mobilization, and risk management capabilities (Kuratko, 2005). Fayolle & Gailly (2015) describe Entrepreneurship education as a structured and formalized learning process aimed at fostering entrepreneurial mindsets, attitudes, and skills, whether applied in new venture creation or within existing organizations (Fayolle & Gailly, 2015). UNESCO (2018) broadens the definition, stating that Entrepreneurship education encompasses all educational activities that seek to prepare individuals to be responsible, enterprising individuals who contribute to economic development and sustainable communities (UNESCO, 2018). GEM (Global Entrepreneurship Monitor, 2021) highlights that Entrepreneurship education is not just about business creation but also about cultivating an innovative and proactive mindset that can be applied in various economic and social contexts (GEM, 2021). In addition; Entrepreneurship education equips individuals with skills to create and manage businesses, thereby contributing to job creation, poverty reduction, and economic diversification (Adebayo & Adeoye, 2022). In Nigeria, where unemployment rates are high, Entrepreneurship education is seen as a pathway to sustainable development by fostering self-reliance and innovation (Ojeifo, 2023).

Gender plays a significant role in shaping the outcomes of entrepreneurship education, as women face specific socio-cultural, economic, and institutional barriers that men do not. These barriers include limited access to finance, education, and training, as well as societal norms that restrict women's mobility and decision-making autonomy (Jiboye, 2021). The relationship between entrepreneurship education and gender, therefore, extends beyond access to training and encompasses the interaction between gender-based variables and the effectiveness of these programs in fostering sustainable development.

The relationship between entrepreneurship education and income generation has been explored in various contexts, with numerous studies highlighting the positive impact of such education on individual and household income. In Nigeria, particularly in the North Western region, studies have shown that entrepreneurship education enhances the income of women by equipping them with essential skills such as financial management, marketing, and business operations. Akanbi and Adejumo (2019) found that women who participated in entrepreneurship education programs experienced significant increases in their monthly earnings, particularly in rural areas where informal businesses dominate. Similarly, Olaoye (2020) found that entrepreneurship education enabled women to access better-paying opportunities through improved business practices, leading to higher income levels.

However, gender-related barriers continue to affect the income-generating capacity of women entrepreneurs in the region. Limited access to capital, societal expectations, and restricted market opportunities remain significant challenges for women (Ishaq & Badruddeen, 2020). These barriers often limit the extent to which entrepreneurship education can result in increased income, highlighting the importance of addressing gendered obstacles alongside the provision of education.

Business growth is another key outcome of entrepreneurship education. Studies have demonstrated that women who receive entrepreneurship education tend to experience growth in their businesses, such as increased profitability, diversification, and expansion into

new markets. According to Agboola (2020), women who underwent entrepreneurship training in the North West of Nigeria were more likely to diversify their business activities, adopt innovative business practices, and increase the scale of their enterprises. These women were also better able to adapt to changing market conditions and overcome challenges like limited resources and technological barriers.

Despite these positive outcomes, gender-based variables continue to affect business growth. Women face difficulties in accessing finance, technology, and networks that could further drive business expansion. As noted by Nwachukwu and Agunbiade (2019), gendered norms and expectations often place women at a disadvantage in the entrepreneurial ecosystem, limiting their ability to scale their businesses even when they have received entrepreneurial training.

Entrepreneurship education is also expected to have a significant impact on employment generation, particularly among women-led businesses. In North Western Nigeria, where unemployment rates are high and the formal job market is limited, women entrepreneurs play a vital role in creating employment opportunities for others. According to a study by Adamu and Anwar (2020), women who received entrepreneurship education in Kano, Sokoto, and Katsina states were found to generate employment by hiring others to work in their businesses. These enterprises not only provide jobs for women but also contribute to the local economy by stimulating demand for goods and services.

However, the impact of entrepreneurship education on employment generation is often moderated by gendered factors such as access to finance and social networks. Women entrepreneurs face barriers in accessing loans and financial resources due to cultural biases and gendered lending practices (Alhassan, 2020). Furthermore, social networks that are predominantly male often exclude women from business-related opportunities, which can limit their ability to hire and create employment for others.

The impact of gender on entrepreneurship education is significant, as gender-based variables, such as access to resources, social networks, and cultural norms, often moderate the effectiveness of entrepreneurship education programs. Gendered constraints affect how women entrepreneurs access capital, navigate business environments, and make decisions within their businesses (Ghosh & Sanyal, 2020). Women in North Western Nigeria face significant societal and institutional barriers that limit the effectiveness of entrepreneurship education.

Multiple regression analysis provides a valuable tool for exploring these moderating effects. For example, the work of Jiboye (2021) used regression models to examine the role of gender-based variables in moderating the relationship between entrepreneurship education and income generation in the Nigerian context. The results indicated that while entrepreneurship education was positively correlated with income, the inclusion of gender-based variables, such as access to finance and decision-making autonomy, increased the explanatory power of the model. This finding highlights the importance of addressing gendered barriers to fully unlock the potential of entrepreneurship education.

Similarly, studies by Ajani and Olamide (2019) showed that gender norms and societal expectations often constrain the effectiveness of entrepreneurship education in enhancing business growth. Their regression analysis revealed that the inclusion of gendered constraints, such as limited decision-making power and access to networks, reduced the positive impact of entrepreneurship education on business expansion.

Over the years, several policies and initiatives have been introduced across the seven North Western states – Kano, Kaduna, Katsina, Kebbi, Sokoto, Jigawa, and Zamfara – to address poverty and gender disparities among women. These policies emphasize skill acquisition, access to microfinance, and the integration of entrepreneurship education into broader development frameworks.

- **Conditional Cash Transfer (CCT) Programs:** In states like Kano and Kaduna, conditional cash transfer programs have been employed to provide financial support to women entrepreneurs, particularly those participating in vocational and entrepreneurship training programs. These initiatives aim to reduce immediate financial burdens while encouraging skill acquisition and economic independence.
- **Women Empowerment Fund Initiatives:** Initiatives such as the Kano State Women Empowerment Programme (KWEP) and similar programs in Jigawa and Zamfara have targeted women entrepreneurs with grants and low-interest loans. These programs often integrate financial literacy training, helping women manage and grow their businesses effectively.
- **Skills Acquisition Programs:** Across the region, skill acquisition centers have been established to train women in trades such as tailoring, food processing, and crafts. Kaduna's Women Training and Development Center, Dangote skills acquisition Centre in Kano and Sokoto's skill acquisition schemes for rural women are examples of targeted efforts to enhance women's entrepreneurial capacities.
- **Integration of Entrepreneurship in Educational Curricula:** All the states in north western Nigeria, have incorporated entrepreneurship education into formal school curricula and adult education programs. This approach equips women with foundational entrepreneurial skills early on, creating a pipeline for future business ventures.
- **Microfinance and Cooperative Support:** Policies promoting access to microfinance, such as the Sokoto Women Microfinance Initiative, have provided women with the financial resources needed to start or expand their businesses. Cooperative societies in Kebbi and Katsina also serve as platforms for women to pool resources and share knowledge.

The 3MTT Policy by the National Information Technology Development Agency (NITDA) in Nigeria refers to the initiative to train three million Nigerians in ICT-based skills. This policy aligns with Nigeria's commitment to digital transformation and sustainable development. The primary motives behind this initiative include:

- i. **Bridging the Digital Skills Gap:** To equip Nigerians with essential ICT skills, addressing the growing demand for a digitally skilled workforce in the global economy.
- ii. **Boosting Employment Opportunities:**
- iii. **By training individuals in high-demand ICT fields, the initiative aims to create job opportunities, especially for youth and underserved populations.**
- iv. **Promoting Digital Inclusion:**
- v. **Ensures that rural and marginalized communities have access to ICT training, fostering inclusivity and reducing the digital divide.**
- vi. **Driving Economic Growth:**

- vii. The initiative seeks to empower entrepreneurs and small businesses with digital skills to enhance productivity, efficiency, and competitiveness in the global market.
- viii. Enhancing Innovation and Competitiveness:
- ix. Encouraging the development of local tech solutions and startups by building a pool of skilled ICT professionals.

Supporting Nigeria's Digital Economy Policy:

- The 3MTT is part of NITDA's broader goal to implement the National Digital Economy Policy and Strategy (NDEPS), which seeks to position Nigeria as a leading digital economy by 2030.
- The training covers a variety of ICT domains, including programming, digital marketing, data analytics, and cybersecurity, and is delivered through partnerships with tech companies, educational institutions, and other stakeholders. The program not only supports national development but also ensures that Nigerians can compete effectively in the global digital economy.
- These initiatives, while promising, face challenges such as inadequate funding, limited reach, and cultural resistance. Nevertheless, their existence underscores a growing recognition of the importance of gender-inclusive economic policies in achieving sustainable development.

In a nutshell, the literature reviewed highlights the significant role of entrepreneurship education in fostering sustainable development among self-employed women in North Western Nigeria. While the evidence indicates that entrepreneurship education positively impacts income generation, business growth, and employment creation, gendered variables such as access to finance, societal expectations, and decision-making power continue to moderate these outcomes. Multiple regression analysis serves as an effective tool to examine the interplay between entrepreneurship education and gender, offering valuable insights into how gendered constraints affect economic outcomes.

Entrepreneurship education has been identified as a critical driver of sustainable economic development, particularly among women in developing economies (Afolabi et al., 2021). In North-Western Nigeria, where cultural and socio-economic barriers often limit women's participation in formal employment, entrepreneurship education serves as a tool for empowerment and economic sustainability (Okafor & Mordi, 2020). This review examines empirical studies on the relationship between entrepreneurship education, gender, and sustainable economic development among self-employed women in the region.

Several studies highlight the positive impact of entrepreneurship education on women's business skills and financial independence. According to Nwosu et al. (2022), structured entrepreneurship training programs in Northern Nigeria have improved women's ability to manage small-scale enterprises, thereby increasing household income. Similarly, Eze and Okoye (2021) found that women who participated in entrepreneurship education programs demonstrated higher business survival rates compared to those without formal training.

However, access to such programs remains unequal. A study by Abdullahi and Bello (2020) revealed that patriarchal norms in North-Western Nigeria often restrict women's participation in entrepreneurial training, limiting their economic growth potential. Similarly, gender disparities in entrepreneurship education persist due to cultural and institutional factors. Research by Shehu and Mohammed (2023) indicates that societal expectations in North-Western Nigeria discourage women from pursuing entrepreneurial ventures, reinforcing dependency on male-dominated economic structures. Furthermore, Aminu and

Gwadabe (2019) found that women entrepreneurs in the region face difficulties accessing financial resources and mentorship, which are critical for business sustainability.

Despite these challenges, interventions such as microfinance and women-focused entrepreneurship programs have shown promise. A study by Yusuf and Dauda (2021) demonstrated that tailored entrepreneurship education for women in Kano and Kaduna states led to improved business performance and economic resilience. Sustainable economic development requires on the other hand, inclusive policies that support women entrepreneurs. According to Okonkwo and Eze (2022), integrating gender-sensitive entrepreneurship education into national development plans can enhance women's contribution to Nigeria's GDP. Additionally, Ibrahim and Umar (2023) emphasized the need for government and NGOs to collaborate in providing business grants and vocational training for self-employed women in rural North-Western Nigeria.

3.0 Research Methodology

This study adopts a qualitative research methodology focused on a systematic review of existing empirical literature to analyze the relationship between entrepreneurship education, gender factors, and sustainable economic development among self-employed women in North-Western Nigeria. The review specifically emphasizes studies that have employed multiple regression analysis to examine these relationships. This owes to the limited primary data on this topic in North-Western Nigeria, a qualitative synthesis of existing studies provides a robust alternative to identify trends, gaps, and policy implications. By focusing on works that have used multiple regression analysis, this review ensures that findings are grounded in statistically validated relationships rather than purely theoretical assumptions. The literature search strategy involves Studies conducted in North-Western Nigeria (or similar regions with comparable socio-economic dynamics). With emphasis on researches on self-employed women or female entrepreneurs that applied multiple regression analysis to test relationships between entrepreneurship education, gender, and economic outcomes. Peer-reviewed articles, reports, and dissertations published between 2004–2024 are consulted via Google Scholar, JSTOR, ScienceDirect, ResearchGate, and African Journals Online (AJOL).

The review will consider three economic outcomes: income levels, business growth and poverty reduction with respect to entrepreneurship education and two mediating variables of gender-related factors (access to finance, cultural constraints, household responsibilities) and institutional support (government intervention).

4.0 Results and Discussions

Entrepreneurship education (EE) plays a crucial role in fostering sustainable economic development, especially for self-employed women in North Western Nigeria, where poverty and gender inequality remain significant challenges. This literature review explored the relationship between entrepreneurship education and gender, focusing on its impact on income generation, business growth, and employment creation, while accounting for the moderating effects of gender-based variables using multiple regression analysis.

Multiple regression analysis offers a valuable tool for examining these complex relationships, revealing how gender-based factors such as access to finance, cultural expectations, and mobility restrictions significantly influence the outcomes of entrepreneurship education. By addressing these barriers, women entrepreneurs could fully benefit from training programs and contribute more effectively to the local economy. Major findings for the study are therefore summarized in the following table.

4.1.2 A Synthesis of Multiple Regression Results from Selected Studies

Study	Key Variables	Regression Findings (β -coefficients, p-values)	Implications
Yusuf & Dauda (2021)	X ₁ : Entrepreneurship training X ₂ : Access to credit	$\beta_1=0.42$ ($p<0.01$) – Strong positive effect of training on income	Training programs significantly boost earnings
Shehu & Mohammed (2023)	X ₁ : Gender norms X ₂ : Business skills	$\beta_1=-0.35$ ($p<0.05$) – Cultural barriers reduce growth	Need for gender-sensitive policies
Okonkwo & Eze (2022)	X ₁ : Govt. support X ₂ : Digital literacy	$\beta_1=0.28$ ($p<0.05$) – Policy support enhances sustainability	Advocacy for more grants & training

The empirical findings suggest that entrepreneurship education positively influences the income, business growth, and employment creation of women entrepreneurs in the region. However, gendered barriers, including limited access to finance, societal norms, and restricted decision-making autonomy as well as low level of financial literacy continue to moderate these effects. Women entrepreneurs face significant challenges, including gender biases in accessing financial resources and social networks, which impede their ability to scale businesses and generate substantial employment opportunities.

Generally, Entrepreneurship education (EE) plays a pivotal role in promoting sustainable economic development, particularly for self-employed women in North Western Nigeria, where poverty, unemployment, and gender disparities persist. The literature reveals that EE positively influences key economic outcomes, such as income generation, business growth, and employment creation. Akanbi and Adejumo (2019) demonstrate that women in North Western Nigeria who participated in EE programs experienced increases in income, while Agboola (2020) highlights the link between EE and business expansion. Additionally, studies by Adamu and Anwar (2020) show that women entrepreneurs contribute to job creation in local communities through their enterprises.

However, gender-based factors significantly moderate the effectiveness of EE programs. Limited access to finance, social norms, and restricted decision-making autonomy hinder women's ability to fully benefit from entrepreneurial education. As Nwachukwu and Agunbiade (2019) indicate, women face challenges in accessing financial resources and business networks, which limits their potential for growth. Furthermore, gender norms that dictate women's roles in society often discourage them from engaging fully in entrepreneurship. The use of multiple regression analysis, as demonstrated by Jiboye (2021), allows for the identification of the complex relationship between EE and gender, showing how gendered barriers affect income, business growth, and employment outcomes.

5.0 Conclusion and Recommendations

This empirical study examined the influence of entrepreneurship education (EE) on poverty reduction among self-employed women in Northwestern Nigeria, with a focus on sustainable development. The findings align with existing literature, demonstrating that EE significantly enhances income generation, business expansion, and job creation for women entrepreneurs in the north western region of Nigeria. However, structural and gender-based barriers continue to limit its full potential.

The study reinforces the critical role of EE in advancing multiple Sustainable Development Goals (SDGs), including: SDG 1 (No Poverty): By increasing income and reducing financial vulnerability among self-employed women, SDG 5 (Gender Equality): By addressing systemic barriers that restrict women's entrepreneurial participation and SDG 8 (Decent Work and Economic Growth): Through business expansion and job creation in local economies.

While EE has significant potential to uplift women in North Western Nigeria, these moderating gender-related constraints suggest that more tailored interventions are necessary to fully realize its benefits and hence suggest that by implementing the following recommendations, the government can create an enabling environment for women entrepreneurs, ensuring that they contribute significantly to economic growth and poverty reduction in the region:

1. **Gender-Sensitive Entrepreneurship Education Programs:** Policymakers should implement EE programs specifically designed for women, addressing both practical business skills and the unique challenges they face. Training should include financial literacy, marketing, and leadership skills, as well as content aimed at overcoming cultural and gendered constraints (Agboola, 2020). This approach could increase the effectiveness of EE in improving business outcomes for women.
2. **Improving Access to Finance:** Financial institutions should offer gender-sensitive lending policies to enhance women's access to capital. As noted by Alhassan (2020), financial exclusion remains a key barrier for women entrepreneurs, and addressing this could significantly impact business growth and income generation. Programs such as low-interest loans, grants, and microcredit schemes should be introduced to support women in accessing capital for business ventures.
3. **Promoting Gender-Equitable Social Norms:** Interventions should aim to challenge traditional gender norms that limit women's participation in economic activities. Awareness campaigns, as suggested by Jiboye (2021), can help shift societal perceptions about women's roles in entrepreneurship. Involving men in supporting women's ventures can also reduce resistance to women's entrepreneurship.
4. **Networking and Mentorship:** The creation of platforms that allow women entrepreneurs to access networks and mentorship opportunities is crucial. Research by Nwachukwu and Agunbiade (2019) highlights the importance of social networks in business success. Government and NGOs should facilitate networks that connect women with experienced entrepreneurs and industry professionals, thus fostering business growth and enhancing job creation.
5. **Inclusive Policy Design and Implementation:** Governments in North Western Nigeria should integrate gender-sensitive policies into economic development plans. This includes enforcing equal access to resources and opportunities for women in entrepreneurship. As indicated by Adamu and Anwar (2020), policy implementation should focus on removing barriers to women's entrepreneurship and monitoring their progress to ensure that EE translates into economic benefits for women.

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