

IMPACT OF ENTREPRENEURSHIP EDUCATION, ORIENTATION AND SOCIAL SUPPORT ON THE PERFORMANCE OF WOMEN- OWNED BUSINESSES IN KANO AND KADUNA STATES

¹Maryam Ubale Dankawu, ²M.C Duru, ³Suleiman Dahiru³ ⁴Umar Salisu

¹Department of General Studies, School of Liberal Studies, Nuhu Bamalli Polytechnic, Zaria.

^{2,3,4}Department of Economics, Ahmadu Bello University, Zaria

¹+2348036448669,

Abstract

This study examined the impact of entrepreneurship education and orientation on the performance of women - owned businesses in Kano and Kaduna states, with social support employed as a moderating variable. A synthesis of human capital and resource-based theories is used as theoretical framework for the study. The computed total sample size for the study was 498 but was rounded up to 500 to ensure adequacy, ease of administration, and avoid potential under-sampling. Therefore, Quantitative data were collected through structured questionnaires administered to 500 women entrepreneurs selected via stratified random sampling. The data were analyzed using partial least squares structural equation model (PLS-SEM). The result revealed that entrepreneurship education significantly and positively influences business performance with ($\beta=0.43$, $p=\leq 0.05$) which indicates that women entrepreneurs who acquired more training and knowledge are likely to achieve better performance. On the other hand, entrepreneurship orientation does not significantly predict business performance with ($\beta = 0.12$, $p > 0.05$). Furthermore, social support was found to significantly moderate the relationship between entrepreneurship education and business performance, enhancing its effect. However, the moderating effect of social support on entrepreneurship orientation was weak despite being statistically significant, with ($\beta = 0.12$, $p < 0.05$). This implies that EO alone was not significant, but when women entrepreneurs receive adequate support, their proactiveness and innovativeness have a stronger impact on performance. The qualitative findings reinforced the important of educational exposure, proactive, behavior, and peer networks in enhancing business outcomes. This study offers practical implications for policy and program design, emphasizing the need for targeted training, supportive ecosystems, and gender- sensitive financing mechanisms to improve the performance of women-led enterprises in northern Nigeria. The study recommends that policy makers and stakeholders should prioritize expanding access to entrepreneurship education, particularly in rural and underserved areas, where women often face significant barriers. Furthermore, formal integration of social support structure-such as peer network, women's association, and community mentorship –development initiatives and continuous training and re-training were recommended among others.

Keywords: Entrepreneurship Education, Social Support, Women Entrepreneurs, Business Performance, Partial Least Squares Structural Equation Modelling (PLS-SEM)

Introduction

Entrepreneurship generally, has gained increasing recognition in recent years as a critical means of improving business performance and economic growth. There has been a renewed focus on entrepreneurial activity as a crucial driver of economic growth. Within the realm of entrepreneurship, the Small and Medium Enterprises (SMEs) sector has become a key area of interest (Dora et al., 2018; Owoeye, 2025). This sector plays a vital role in promoting growth, innovation, job creation, regional development, and the mobilization of capital and skills, as well as creating backward and forward linkages (World Bank, 2023). The role of women entrepreneurs toward contributing positively and significantly to household income, poverty reduction, economic growth and national development, has attracted a number of interventions to support and promote them.

However, many women entrepreneurs continue to struggle with poor performance, as they find it difficult to achieve sustainable business growth due to myriads of challenges which continue to undermine their growth and competitiveness. In essence, women-owned businesses underperform compared to men's enterprises, thereby, making their performance to remain at sub-optimal level. These challenges are even, more pronounced in Northern Nigeria, where socio-cultural norms strongly shape women's participation in economic activities (SMEDAN, 2024). Although women are increasingly establishing new business (47% of new ventures in 2024 were female-led), this growth has not fully translated into competitive performance outcomes; only 63% of women-owned businesses reported growth in 2024, which declines from prior years and trails behind comparable male-led firms (Business A.M., 2025). This indicates that while women are highly represented in entrepreneurship, they underperform in key business outcomes, undermining the sustainability and competitiveness of their enterprises in the Kano and Kaduna States commercial ecosystems. Therefore, the key objective of the study is to examine the impact of entrepreneurship education and orientation on the performance of women-owned business in Kano and Kaduna states, with social support taken as a moderating variable.

Literature Review

This section deals with the review of related literature and includes the conceptual, theoretical and empirical literature reviews.

Conceptual Review

In an attempt to clarify some important concepts relevant to the study, this part of the study presents conceptualization of key concepts as follows:

Concept of Entrepreneur

The term entrepreneur originated from the French term "entreprendre", which means "to undertake" or 'to embark' i.e to undertake organisation or management and to assume business risks (Hisrich et al., 2021). Richard Cantillon, defined entrepreneurs as those individuals who bear the risk of buying at certain prices and selling at uncertain prices. Schumpeter (1934) expanded this definition beyond the concept of a businessman trading goods or services to incorporate innovation. Schumpeter argued that entrepreneurship is a process by which the economy moves forward through the act of creative disruption or innovation. This definition placed innovation at the very centre of entrepreneurial behaviour.

However, definitions of who is or who isn't an entrepreneur can often limit the scope of the concept. Therefore, definitions that consider the identification and exploitation of opportunities, the marshalling of resources and the satisfying of a felt need within the market provide a more inclusive approach to understanding the entrepreneur. Shane and Venkataraman (2000) define the entrepreneurial function as the link between the presence of lucrative opportunities and the presence of enterprising individuals. Therefore, in modern academic discourse, an entrepreneur is beyond a small business owner, but rather an individual who proactively discovers, evaluates, and exploits market opportunities by mobilizing resources and assuming uncertainty to create new economic value. In essence, the term entrepreneur refers to the person whereas, entrepreneurship is the process of creating something different or new with value by devoting the necessary time and efforts, assuming the accompanying financial, psychic, social risks and receiving the resulting rewards of monetary, personal satisfaction and independence.

Women Entrepreneurship

Classical economic literature historically treated the entrepreneur as a gender-neutral actor, while contemporary scholarship recognizes women's entrepreneurship as a distinct construct that requires a gender-aware analytical lens. Fundamentally, women's entrepreneurship is defined as the process by which female individuals initiate, organize, manage, and assume the risks of a business venture. However, modern scholarly definitions expand upon this by emphasizing that a female entrepreneur cannot be separated from her socio-institutional context. Therefore, Brush, de Bruin, and Welter (2009) advanced the theoretical understanding of this concept by introducing the "5M" framework in which they argued, that traditional entrepreneurial theory, with its focus on *Markets, Money, and Management* is insufficient. Therefore, a true scholarly definition of women's entrepreneurship must incorporate two additional dimensions known as *Motherhood* (representing the overlapping spheres of family and household responsibilities) and the *Macro/Meso environment* (representing societal structures, cultural norms, and gendered expectations).

In addition, Ahl (2006) criticized the implicit consideration of an entrepreneur as male, arguing that women's entrepreneurship is fundamentally characterized by how female founders navigate systemic inequalities, institutional biases, and restricted access to formal credit networks. Women entrepreneurship refers to the process through which women establish, organize, and manage business ventures with the aim of creating economic and social value. It involves women having more stake or shares and identifying business opportunities, mobilizing resources, preparing business plans, securing finance, and overseeing daily business operations. Generally, it involves the ability of women to identify opportunities, allocate resources, and create value for themselves and others in the pursuit of an entrepreneurial venture. It requires the development of skills, knowledge, and networks to identify and seize opportunities, and to manage risks and uncertainties by women. In essence, women's entrepreneurship is regarded as the systemic process where female founders discover, evaluate, and exploit market opportunities while simultaneously navigating and negotiating gendered socio-cultural, institutional, and familial constraints to create both economic and social value.

Entrepreneurship Education

Entrepreneurship education (EE) has been recognized by Kourilsky and Walstad (1998) as one of the most important factors that can help young people understand and form a positive attitude towards entrepreneurial initiative and has been defined in a number of ways by different authors and scholars as some were presented as follows: According to Bosma, Acs, Autio, Coduras and Levie (2008), it is about promoting sense of self-worth and creative

thinking rather than just teaching someone how to run a business. Jones and English (2004) viewed it as a way of developing individuals' ability to recognize business opportunities and cash on them, to develop self-esteem and to develop knowledge and skills in commencing a business venture in the event of risk. In addition, Black, Corbin, Warburton and Campbell (2003) defined it as the process of providing individuals with the concepts, creativity and skills to recognize opportunities that others have overlooked, and to have the insight, self-esteem and knowledge to act when others have hesitated.

Furthermore, Alberti, Sciascia and Poli (2004), defined entrepreneurship education as the structural and formal conveyance of entrepreneurial knowledge, skills and mentality individuals' use during startups and development of growth-oriented ventures. Generally, it is the process of providing individuals with the ability to recognize commercial opportunities and the knowledge, skills and attitudes to act on them or a learning process of developing skills and mindset, which creates a pathway to transform creative ideas into entrepreneurial action acquiring entrepreneurship knowledge (Sozen & O'Neill, 2018). This study consider entrepreneurship as defined by Sozen & O'Neill, (2018).

Entrepreneurial Orientation

Like entrepreneurial education, orientation has been defined by different authors and scholars. Covin and Slevin (1991), defined entrepreneurial orientation as the firm's willingness to innovate and renew market offerings, take business related risks in trying out new and uncertain goods and services, as well as succeeding in competing with rival firms by being proactive. In other word, it is a firm's strategic organizational posture, capturing specific entrepreneurial aspects of decision-making styles, approaches, and behavior (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2003; Wales *et al.*, 2013). As such, it is a driving force for the organizational pursuit of entrepreneurial endeavors and activities (Covin & Wales, 2012)

According to Beattie (2016) and Richard *et al.* (2004), entrepreneurial orientation has been conceptualized in existing literature as having three to five dimensions. However, three (3) dimensions of entrepreneurial orientation are commonly used in the literature: innovativeness, pro-activeness and risk taking which was first introduced by Miller (1983). The concept of entrepreneurial orientation (EO) emerged from the previous and already well-established literature concerning strategic management as scholars recognized a need for purifying the elements surrounding EO (Mintzberg, 1973; Rauch, Wiklund, Lumpkin, & Frese, 2009). Three firm-specific characteristics, first introduced by Miller (1983), have been regarded as the norm when clarifying the EO construct, being innovation, risk-taking and proactiveness (Wiklund, 1999; Wiklund & Shepherd, 2003, 2005). Therefore, these three dimensions best represent the conceptual view of an entrepreneurial orientation (George & Marino, 2011).

Dimensions of Entrepreneurial Orientation

Innovativeness

Innovativeness as a dimension of entrepreneurial orientation refers to the pursuit of creative or novel solutions or challenges (Knight, 1997). It includes ability of a business firm to improve or come up with a new idea, creative processes and new technologies (Lyon, Lumpkin & Dess, 2000). Also, it is the willingness of a firm to support the creativity, new

ideas, as well as experimentation in producing goods and services (Mahmood & Hanafi, 2013; Covin & Miller, 2014).

Proactiveness

Proactiveness as another dimension refers to the tendency for enterprises to take the positive marketing strategy, proactive action, and leading strategy to introduce new products, new processes, new technologies, and new services in order to transcend the competitors (Zhai *et al.*, 2017). It refers to the process by which business firms will take advantage of the first move against its competitors (Lumpkin & Dess, 1996; Lumpkin & Dess, 2001; Wiklund & Shepherd, 2005).

Risk taking

Risk-taking is the willingness to commit large amounts of resources to projects whose results are unknown and where the cost of failure may be high (Miller and Friesen, 1978). It signifies the ability of the firm to make substantial financial resource commitments with the objective of realizing high profits via market opportunities. Also, risk taking refers to the process by which business firm borrow heavily and invest in opportunities with high returns and high risk explored markets (Covin & Miller, 2014). Hoque *et al.* (2018) stated that risk-taking implies to the degree to which entrepreneurs are eager to make large resource commitments. Thus, firms' managers who are so bold in taking business related risks are more likely to achieve and sustain performance over non entrepreneurial firms that are characterized as risk-averse (Miller, 1983).

In the light of the above, the present study viewed entrepreneurial orientation as the organizational behaviour that indicates the extent to which women entrepreneurs imbibe the culture of innovativeness, proactiveness and risk taking.

Business Performance

Business performance is a concept that has also been defined in different ways by various scholars. According to Kaplan and Norton (1992), it refers to a set of measures that not only quantify results but also communicate an organization's performance to external stakeholders and indicate progress toward specific goals. Teece *et al.* (1997) view business performance as the ability of a company to generate profits, sustain them, and increase them over time. Meanwhile, Park and Luo's (2001) definition emphasizes the importance of achieving goals and objectives in a competitive environment and creating value for shareholders. Malmi and Brown (2008) define business performance as the extent to which a firm achieves its goals and objectives, as well as the effectiveness and efficiency of its operations. Finally, Schaltegger and Wagner (2011) view business performance as the degree to which a company meets its economic, social, and environmental objectives while remaining profitable and competitive. This study considered business performance as defined by Teece *et al.* (1997) while also extending it to attainment of sustainable customer satisfaction.

Social Supports

Social support is a concept referring to the voluntary action from one person toward another (Vogel & Wei, 2015). This voluntary action comes from different sources, such as family, friends, school, community or spouse and it appears in various forms like physical, emotional (sympathy, love, care), verbal, financial aid (Samadifard & Damirchi, 2018). Social support includes social assets, social resources, or social networks that people can access when in

need of aid, advice, help, assistance, protection or backing (Abbey, Abramis, & Caplan, 1985). Similarly, Baron and Markman (2013) view it as the actual and potential resources that individuals obtained from knowing others, being a member of a social network or merely knowing them. Mair and Noboa (2016) found that social support has a positive correlation with motivation and a person's drive to reach something they want.

Moderating Role of Social Support

Prior researchers have found that social support is a complex multidimensional construct that comprises a set of related, but distinct constructs. Therefore, (Barrera, 1986; Lakey & Cohen, 2000) suggested the need to be clear about the desired constructs and the theoretical model(s) that are the focus for any given study, in order to know which measures may provide the best fit for the specific purposes. In the context of this study, social support construct is assuming the most appropriate construct, given the fact that women entrepreneurs that have gain entrepreneurship education will get their business performance improved. Again, previous studies tend to overlooked the moderating role of social support on the entrepreneurship education-business performance relationship. This study assumed that social support might strengthen the entrepreneurship knowledge gotten thereby leading to enhanced performance of women owned businesses and ultimately leading to higher economic benefits.

Theoretical Literature

A number of theories expressing link between entrepreneurship education, orientation and business performance were reviewed.

Human Capital Theory (HCT)

This theory considered human capital as skills and knowledge that individuals acquire through investments in schooling, on-the-job training and other types of experiences (Becker, 1964). Specifically, it includes the unique insights, skills, cognitive characteristics and aptitudes of entrepreneurs. Becker (1993) added that it also includes achieved attributes, accumulated work and habits that may have a positive or negative effect on productivity. These skills sets and knowledge are regarded as individual attributes that can have positive influence on entrepreneurial success and business performance.

Resource Based Theory (RBT)

According to RBT theory, firm performance is based on the application of valuable tangible and intangible resources (Baney, 1991; Penrose, 1959). The theory assumed that if all firms within the same industry have homogeneous resources, then none of them is having a possibility of sustained competitive advantage.

Empirical Literature Review

The link between entrepreneurship education (EE) and the performance of women-owned businesses is significant for contemporary economic development and gender equality strategies. As the contribution of women entrepreneurs to economic growth, job creation, and poverty reduction is regarded, they face unique systemic, cultural, and financial barriers that often result in disproportionate underperformance compared to their male counterparts (Cardella et al., 2020). Entrepreneurship education is increasingly recognized as a strategic intervention to equip women with the competencies, social capital, and self-efficacy required to navigate these challenges. The review of empirical evidences is important as it entails moving beyond theoretical assumptions and understanding the actual efficacy of educational interventions on venture survival, growth, and performance. The essence of the empirical

review is to critically analyze recent scholarly trends to determine the impact of entrepreneurship education on female entrepreneurial intentions, behaviors, and subsequent business performance. By integrating these studies, this review aims to identify methodological and contextual gaps that justify further investigation.

The empirical review is organized thematically, moving from the macro-level systemic understanding of female entrepreneurship to specific empirical examinations of educational impacts on entrepreneurial intention and firm performance across different emerging economies. Cardella et al. (2020) conducted a comprehensive systematic review of the global literature to outline the boundaries of research on women entrepreneurship to identify primary factors explaining the difficulties women face in entrepreneurial careers using bibliometric cluster analysis. The study isolated distinct research clusters, identifying entrepreneurship education, social capital, and socio-cultural contextual support (e.g., family and institutional backing) as the most critical tools for overcoming the entrepreneurial gender gap. The study confirms that women face a 63% lower likelihood of obtaining external venture financing, making educational interventions vital for building compensatory human capital. The study's strength lies in its expansive scope and robust bibliometric mapping. However, as a systemic review, it relies on secondary synthesis rather than primary empirical testing of educational outcomes.

Deng and Wang (2023) investigated the effect of EE on entrepreneurial intention (EI) across different student demographics, specifically focusing on gender, household registration, and poverty status. The study used logistic regression models and the findings reveal that EE has a statistically significant positive impact on entrepreneurial intentions. Also, the heterogeneity analysis revealed that EE has a substantially more significant impact on women's EI than men's. This indicates that education serves as a powerful incentive for reducing the initial entrepreneurial gender gap. A major strength is the rigorous use of robustness checks and control variables (individual, family, and school types) to mitigate endogeneity. A limitation is the reliance on intention as a proxy for future venture performance, which does not guarantee future business survival. Going beyond intention, the behavioral application of learned skills directly affect firm performance. Schmidt et al. (2022) explored these dynamics among student entrepreneurs by integrating economic and behavioral perspectives in analyzing gender differences regarding entrepreneurial behavior and actual firm performance in Brazil using quantitative method. The findings of the study revealed significant gender differences in core entrepreneurial characteristics and their direct relationship with performance. Women often perceive themselves as requiring much higher educational levels than men to pursue similar ventures due to ingrained stereotypes. As a strength, the study integrates psychological traits with economic outcomes. However, self-reported perceptions of capability can sometimes skew objective performance data.

Furthermore, in the case of the developing world, Jan et al. (2023) examined the factors linking the intention of a female entrepreneurial mindset within small and medium-sized enterprises (SMEs) in Pakistan using quantitative survey-based research. The study found that education and prior professional experience significantly impact entrepreneurial adaptability and intention. In Pakistani, lack of education and lack of family/financial backing are the primary constraints to business performance. Formal education and real-life skills training were found to be essential in equipping women to establish and sustain their businesses despite socio-economic instability. The strength of the study lies in the contextual focus on a highly restrictive socio-economic environment. The limitation is potential

geographical bias, as the findings are highly specific to the socio-cultural dynamics of Pakistan. However, its relevance is on the proof that in emerging markets, EE is a primary driver of venture resilience and performance for women-owned SMEs.

A comparative synthesis of the review reveals strong alignments across countries despite distinct contextual differences. There was a unanimous consensus on consideration of entrepreneurship education as a critical catalyst for female business engagement. All studies agree that women face disproportionate barriers (financial, cultural, and psychological) and that education acts as a vital mechanism to build the self-efficacy and strategic adaptability required to overcome them as reported in different across distinct economies, be it in China (Deng & Wang, 2023), Brazil (Schmidt et al., 2022), or Pakistan (Jan et al., 2023). The main area of divergence lies in how performance and success are conceptualized. Schmidt et al. (2022) argued that women often integrate qualitative metrics (e.g., service quality, work-family balance) into their performance goals, whereas traditional definitions lean heavily on financial growth. Geographical and socio-cultural contexts heavily dictate the exact function of EE and therefore, the reason for the variations. In Pakistan (Jan et al., 2023), EE acts primarily as a survival mechanism against severe structural unemployment and lack of family support. In China's academic environment (Deng & Wang, 2023), EE acts as an institutional equalizer to drive initial venture creation. These contextual disparities underscore that the impact of EE on performance is highly sensitive to the surrounding socio-cultural ecosystem.

The empirical review establish that entrepreneurship education is a highly effective intervention for fostering female entrepreneurial mindsets, mitigating systemic gender barriers, and improving venture adaptability. The various studies indicate that EE significantly closes the gender gap in venture creation (Deng & Wang, 2023), equips women to navigate socio-cultural hostility (Jan et al., 2023), and shapes their behavioural approaches to firm performance (Cardella, et al., 2020; Schmidt, et al., 2022).

On the side of entrepreneurship orientation, Akinyele (2021) examined the direct impact of EO dimensions (innovativeness, risk-taking, and proactiveness) on the performance of women entrepreneurs in small-scale enterprises in Nigeria. The findings of the study reveal that women entrepreneurs must embrace innovativeness, risk-taking, and proactiveness to enhance business performance. However, the study appears to treat the EO-performance link as a straightforward direct effect, potentially overlooking complex environmental or social mediators. Dwumah et al. (2024) examined how network ties moderate the relationship between EO and SME performance in Ghana. Using regressions and interaction analysis, the study found that while EO components (innovativeness, proactiveness, risk-taking, and competitive aggressiveness) significantly improved SME performance, the owner-managers' network ties acted as a crucial, positive moderator. A major strength of this study is its empirical validation that social capital can amplify the benefits of EO. However, a limitation observed is that the study did not distinguish, female-led from male-led firms, thereby considering the gender-specific influence of network moderation somewhat vague. In addition, Espinoza-Samaniego (2025) employed, a mediation and moderation PLS-SEM model to examine EO in Latin American family businesses using gender diversity as a moderator. The study found that the direct path from EO to organizational performance was not significant; instead, the relationship was fully mediated by innovation. Furthermore, the inclusion of women in leadership did not significantly moderate the financial outcomes, suggesting that gender impact is highly dependent on specific structural contexts. The rigor in the methodology could be regarded as a strength the focus on family businesses rather than

women-owned businesses is broad and requires caution when applying these findings to female entrepreneurs.

Research Gap

In spite of the growing body of literature, a number of gaps still exist: Conceptually and empirically, significant portion of the literature emphasizes entrepreneurial intention rather than longitudinal, post-launch firm performance. There is a dearth of empirical data tracking how specific educational curricula translate into long-term financial metrics (revenue growth, sustainability or survival) for women-owned businesses. In addition, the reviewed empirical studies are predominantly situated in emerging economies (Brazil, China, Pakistan). There is a need for cross-cultural comparative studies that evaluate how EE and EO impacts female business performance in other developing countries particularly Africa using standardized performance metrics while extending to specific regions of the developing countries. This implies contextual and geographical gaps. Methodologically, most studies rely on quantitative regression models based on self-reported survey data. There are a lack of mixed-methods approaches that combine objective financial data from women-owned enterprises with qualitative insights into their educational journeys. The current study intends to address some of these deficiencies by switching the dependent variable from intention to objective business performance while incorporating social support as a moderating variable. By utilizing a mixed-methods design, the present research longitudinally assessed the financial and operational growth of established women-owned businesses, thereby bridging the gap between cognitive intention and empirical market survival. The use of PLS-SEM is also a significant attempt to bridge the gap.

Materials and Methods

This section highlights methods of data collection and analysis employed in the study. The reliability and validity of this research are ensured through the adoption of carefully designed methodological approach that aligns with the study's objectives and nature of the research questions.

Research Design

Research design is the overall, logical structured plan that guide a researcher in collecting, analyzing and interpreting data in a manner that align with the research objectives. It serves as a blue print that outlines how to systematically address the research question and hypotheses ensuring the study's findings are valid, reliable, and logically derived (Creswel and Creswel,2018).

Population of the Study

The target population of the study comprises registered women-owned businesses in Kano and Kaduna States, Nigeria and the total population across the two states as obtained from official sources as business associations, including the Nigerian Association of chambers of commerce, industry, mines and agriculture (NACCIMA,2021),the Nigerian association of small and medium enterprises(NASME), and National association of small-scale industrialist (NASSI)was 9203 businesses, with 6430 located in Kano state and 2773 in Kaduna state. The population includes businesses across various sectors such as manufacturing, services, trade and agro-processing. The use of these categories ensured that the study remain focus on formal and semi formal women-owned enterprises as adopted from previous studies like Aliyu (2021). Since in each organization only registered entrepreneurs in specific sectors (service, trade, or agriculture), the researcher has to manually compile complete list for the

study. Only women who are owner-managers were included, as they are deemed more capable of providing accurate and relevant information about their businesses.

Sampling Technique

This study employed stratified random sampling technique as it ensures representative and proportionate coverage of the population across key sub-groups in this case, women entrepreneurs in Kano and Kaduna states. The population was naturally divided into strata base on geographical location (Kano with 6430 women and Kaduna with 2773 women) and the sampling process ensured that each state was represented in the sample according to its share of total population. This method reduces sampling bias and increases the precision of estimates by ensuring that the sample reflected the actual population. Furthermore, stratified sampling enhanced the generalizability of the findings across the two states, making it appropriate for a study aimed at measuring the effects of entrepreneurship education, orientation and social support on business performance.

Sample Size Determination

The sample size was determined using Yamane's (1967) formular which is suitable for calculating sample size from a known population with a specified level of precision and aim to minimize sample error. This formular was preferred over Krejcie and Morgan's (1970) sample size table because it allowed for direct calculation using the actual population size and provided flexibility in setting the margin of error. The Yamane formular is given in equation 1:

$$n = \frac{N}{1+N(e)^2} \dots\dots\dots 1$$

Where: n = Sample Size, N = 9,203 (population size), e = 0.05 (margin of error)

$$= \frac{9203}{1 + 9203(0.05)^2} = \frac{9203}{1 + 9203(0.0025)} = \frac{9203}{24.0075} = 383$$

The sample size determined using Yanane's formular was increased by 30% to account for potential non-response, as recommended in survey research (Isreal, 1992; Sauders etal., 2019).

The calculation of the 30% of the sample size, based on the initial sample size of 383, gives as follows:

$$\begin{aligned} \text{30\% increase is: } & 383 \times 0.30 = 115 \\ \text{Total recommended sample size} & = 385 + (385 \times 0.30) \\ \text{Total sample size} & = 383 + 115 = 498 \\ \text{The final adjusted sample was} & = 500 \end{aligned}$$

Although the computed total sample size for the study was 498, we rounded up to 500 to ensure adequacy, ease of administration, and avoid potential under-sampling, following common practices in survey research. Research guidelines recommended rounding up sampling size tonext whole number to ensure sufficient representativeness and statistical robustness (Adams,Khan, Raeside & White, 2007).

Thefinal adjusted sample was then stratified proportionally between Kano and Kaduna States. The breakdown by location gives: Kano = 350 (70% of 500) and Kaduna = 150 (30% of 500). The stratification of the random sampling technique was to ensure fair representation across the two strata, Kano and Kaduna states. Given the proportionate allocation, where Kano state is 350 and Kaduna state is 150, the, total sample size becomes 500 respondents.

The stratification was based on geographical location to reflect the socio-economic diversity of the two states.

Type, Sources, and Methods of Data Collection

The type of data used in the study was cross-sectional sourced from primary sources. The primary quantitative data were collected using a structured self-administered questionnaire designed to measure the core constructs of the study.

Quantitative Data Collection

Survey technique is the collection of primary data about the subject matter of the research and involves the selection of a representative sample of the population under study through the use of a questionnaire. (Hair et al., 2023). This involves collecting primary data about women entrepreneurs in Kano and Kaduna States, Nigeria. Before administering the main questionnaire, a pilot study was conducted to assess the clarity, validity, reliability, and suitability of the research instrument for the main survey (Saunders et al., 2023; Hair et al., 2023). Specifically, the pilot study was intended to evaluate the wording of the questionnaire items, identify ambiguous or repetitive questions, estimate the time required to complete the questionnaire, and detect any weaknesses in the layout and sequencing of the questions. A total of 30 women entrepreneurs, comprising 15 from Kano State and 15 from Kaduna State, who possessed characteristics similar to those of the target population, participated in the pilot study. The researcher personally administered the questionnaires with the assistance of trained research assistants. Before administering the questionnaire, the purpose of the study was explained to the participants, and they were assured that their responses would be treated confidentially. Most of the completed questionnaires were collected immediately after completion, while the remaining questionnaires were retrieved within an agreed period. During the pilot study, some respondents requested clarification on a few questionnaire items, while others experienced time constraints in completing the questionnaire. These challenges were addressed by providing additional explanations where necessary and revising ambiguous questionnaire items before the administration of the final questionnaire.

Quantitative data were collected through self-administered structured questionnaire containing closed-ended items measured on five-point Likert scale (1=Strongly disagree to 5= Strongly agree). The questionnaire covers constructs such as: Entrepreneurship Education, Social Support and Business performance.

Design of Questionnaire

The structured questionnaire was divided into four main sections: Demographics, Entrepreneurship Education, Social Support and Business Performance.

Constructs Measurement

The purpose of measurement is to explain the characteristics and properties of empirical events into a form that can be evaluated in the study. There are three major constructs, namely; Business Performance (BP), Entrepreneurship Education (EE) and Social Support (SS). Therefore, were measured using items adopted and adapted from a number of previous studies. A Five-point Likert scale was used for measuring all the items in the questionnaire with responses ranging from '1' Strongly Disagree (SD), '2' Disagree (D), '3' Neutral (N), '4' Agree (A), and '5' Strongly Agree (SA). Thus, Table 1 presents the summary of constructs measurements of the study.

Table 1: Construct Measurements

Constructs	Measurements
Entrepreneurship Education (EE)	Measured as uni-dimensional with 6 items.
Entrepreneurial Orientation (EO)	Measured by innovativeness, pro activeness and risk-taking with 9 items.
Social Support (SS)	Measured by Appraisal, Belonging and Tangible Supports with 12 items
Business Performance (BF)	Measured by sales growth, financial growth and customer satisfaction with 7 items.

Note: (EE scale adapted from Nabi et al. (2017); SS scale adapted from Zimet et al. (1988); BP scale adapted from Gupta and Govindaraja (1988).

Variables, Model and Specification

This sub-section highlights both the dependent and independent variables and the model with its specification.

Dependent Variable: Business Performance (BP) - This was measured via perceived financial, non-financial, and archival (objective) financial performance measures (Rauch et al., 2009). Perceived measures use a rating scale compared to competitors, whereas archival measures use actual financial data (e.g., yearly sales or profit). Perceived measures of business performance were used due to the difficulty in getting well documented or archival financial data. The business performance of women entrepreneurs was measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) modified from Stam and Elfring (2008).

Independent Variables: Entrepreneurial Education (EE) -To measure EE dimensions, the study used the EE scale comprising a total of 6 items on the roles of educational and business training. Therefore, it is measured as uni-dimensional index with 6 items. Items were measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). To support information from EE, education level and business training were measured as separate variables in the model in order to see their effects as well.

Entrepreneurial Orientation (EO): To measure EO dimensions of women entrepreneurs, we adapted the EO scale of Mozumdar *et al.*, (2020). The EO scale included a total of 22 items of innovativeness, risk-taking, and proactiveness. Items were measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). EO dimensions of women entrepreneurs will be extracted from exploratory factor analysis.

Social Support (SS): This was measured on the basis of appraisal, belonging and tangible supports with 12 items in the index. It was measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) with items on the ease to find someone to offer financial support when needed (tangible), getting some to share business challenge (appraisal) and ease to get a willing partner (belonging) among others.

Model Specification

The structural model specifies the hypothesized relationships among the latent constructs in the study. In PLS-SEM, the structural model represents the direct and moderating

relationships between the exogenous and endogenous constructs (Hair et al., 2022; Hair et al., 2023).

Functional Model: $BP = f(EE, EO, SS, EE \times SS, EO \times SS)$

Where: BP = Business Performance, EE = Entrepreneurship Education, EO = Entrepreneurial Orientation

SS = Social Support, $EE \times SS$ = Interaction between Entrepreneurship Education and Social Support

$EO \times SS$ = Interaction between Entrepreneurial Orientation and Social Support

Structural Model

The hypothesized structural relationships are expressed as:

$BP \leftarrow EE$; $BP \leftarrow EO$; $BP \leftarrow SS$; $BP \leftarrow EE \times SS$ and $BP \leftarrow EO \times SS$

These structural paths indicate that Entrepreneurship Education, Entrepreneurial Orientation, and Social Support directly influence Business Performance, while Social Support also moderates the relationships between Entrepreneurship Education and Business Performance, and between Entrepreneurial Orientation and Business Performance.

Techniques of Data Analysis

The study employed both descriptive and inferential statistics. Statistical package for social science (SPSS) version 23 was used for data entry and preliminary analysis for dictating and replacing missing values, testing for normality as well as dictating and treating outliers. It was also used for descriptive statistical analysis of demographic data as well as variable of the study (frequency, mean, and standard deviation). In addition, the main techniques used is partial least squares -structural equation modelling (PLS - SEM) and was employed to test the hypotheses and examine the relationships involving the moderating role of the social support. The choice of PLS-SEM for quantitative analysis was based on its suitability for complex model (Hair et al., 2017 & 2019). Furthermore, the PLS -SEM involves factor & multiple regression analyses for modelling relationship between measured variables (Educational Training, Tangible Support, Performance Rating) and latent constructs (EE, EO, SS, BP). It is preferred by because it estimates the multiple and interrelated dependence in a single analysis. In addition, it is a flexible technique capable of estimating complex models (many constructs, many variables, many causal relationships between constructs –arrows –and formative models).

Results & Discussion

This section presents and discusses the result of the data analysis which includes preliminary analyses, descriptive statistics, measurement model assessment, structural model evaluation, and moderation analysis.

Preliminary Analysis:

Before conducting the main structural analysis, preliminary analyses were carried out to ensure that the dataset was clean, reliable and suitable for further examination. This stage involved data screening, descriptive statistics, assessment of missing values, and the evaluation of reliability and validity of the constructs. There was no missing data found after cleaning. Normality, Skewness and Kurtosis were within acceptable range (± 2) though PLS-SEM does not strictly require normality.

Response Rate: Out of 500 questionnaires distributed, 440 were returned (88%), 35 invalid responses were recorded leaving 405(81%) valid responses, which is considered adequate based on Sekaran (2003).

Data Coding and Screening

The duly responded and returned questionnaires (405) were entered into the coded SPSS variable view page. Each item/question was coded based on its main variable initials and its serial position in relation to other items under the same latent construct. For example, items/questions measuring Entrepreneurship Education were coded as EE1, EE2, EE3, EE4, EE5 and EE6; items/questions measuring Entrepreneurial Orientation were coded as EO1, EO2, EO3.....EO9, EO12; Social Support was coded as SS1, SS2 SS9 and finally, Business Performance was coded BP1, BP2, BP3, BP4 and BP5. After carefully entering all the responses accordingly, data screening was performed so as to detect missing values and outliers. However, apart from checking and replacing missing values as well as detecting and treating outliers, other preliminary analyses performed in this study include normality and multicollinearity tests as suggested by (Hair et al. 2017). The analysis of missing values reveals minimal data loss across the dataset, with the highest frequency of missing values observed in EE2, EE4, and BP2, each with 2 missing values accounting for 0.50% of the total. Other indicators, including EO3, EO9, EO10, SS3, SS7, SS8, and BP4, recorded only 1 missing value each, representing 0.20% of the dataset. All missing values were replaced using the mean substitution method, as the missing values were determined to occur at random, minimizing the risk of introducing bias into the analysis. The use of mean substitution is supported by recent studies, such as those by Zhang et al. (2022) and Dong and Peng (2021), which emphasize its effectiveness in preserving the statistical properties of datasets when missingness is random and minimal. This approach maintains the overall distribution and variability of the data while ensuring the sample size remains intact for robust statistical analysis. Additionally, cases outside the range ($Q1 - 1.5IQR$, $Q3 + 1.5IQR$) were identified as potential outliers, requiring further examination to assess their impact. The careful handling of missing values, backed by recent literature, ensures the reliability and validity of the dataset for in-depth interpretation and decision-making.

For the analysis of outliers, the measure for Mahalanobis D2 in this study with 34 cases, revealed a chi square value of 64.05 (at $p < .001$) which implies the absence of multivariate outliers in the data set and therefore no item was deleted. The histogram of regression standardized residuals for the dependent variable Business Performance (BP) indicates that the residuals are approximately normally distributed, satisfying a critical assumption for linear regression analysis. The distribution is symmetric around the mean (Mean = $5.01E-15$), which is nearly zero, and the standard deviation (SD = 0.996) reflects a reasonable spread of residuals. The bell-shaped curve closely aligns with the normality curve, suggesting minimal deviations from normality. With an adequate sample size of $N = 405$, the assumption of normality is well-supported, ensuring the validity of inferential tests and regression models derived from the data. While the histogram suggests normality, additional formal tests, such as the Skewness and Kurtosis, were done to further validate this assumption. Based on their results, it is concluded that the data is found to be normal because the absolute values of the Skewness and Kurtosis of all the items in this study are within the acceptable range of < 2 and < 7 , respectively. To test the existence of multicollinearity among exogenous variables of this study, two methods were used; correlation matrix and variance inflation factor (VIF) for the first test, where VIF 0.90 and above: indicates very high correlation between variable, suggesting extreme multicollinearity (O'Brien, 2007; Hair et al., 2010; Kutner et al, 2005; Montgomery et al., 2012). The results of the coefficients of the correlation matrix indicate moderate to strong positive relationships among the variables, with EO and SS showing the highest correlation ($r = 0.688$, $p < 0.01$), followed by EE and SS ($r = 0.623$, $p < 0.01$) and EE and EO ($r = 0.610$, $p < 0.01$). While these correlations are statistically significant, they fall

below the critical threshold of 0.90, as suggested by Hair et al. (2010), indicating that multicollinearity is not a concern in this dataset. The absence of excessively high correlations ensures that the independent variables contribute uniquely to the model, maintaining its validity. These findings confirm that the dataset is suitable for further regression analysis without the risk of multicollinearity distorting the results. Overall, the data is appropriate for regression-based analyses.

Evaluation of Partial Least Squares (PLS-SEM) Path Model Result

The estimation of the outer model (i.e. measurement model) is first examined by checking the internal consistency reliability (i.e. Cronbach alpha and composite reliability), convergent validity, and discriminant validity. After establishing the reliability and the validity of the constructs, the structural model estimates were evaluated. The structural model (inner model) evaluation determined the predictive ability of the model. Hence, the evaluation criteria involving PLS-SEM include the coefficient of determination (R^2 values) and the significance level of path coefficients (Wong, 2017; Hair et al., 2017).

Assessment of Measurement Model

The first step in PLS-SEM analysis is the assessment of the measurement model (outer model) which determines how well the indicators (items) load theoretically and associate with respective constructs. In other words, analysis of the outer model confirms whether the survey items measure the constructs they were designed to measure, thus ensuring that they are reliable and valid.

Individual Item Reliability of Reflective Measurement Model

The individual item or factor reliability of construct was determined using the outer loadings of each construct's indicators. Based on the rule of thumb of Hair et al. (2014), an indicator with 0.70 outer loading is reliable and acceptable for already developed scale. Hence, following Hair et al. (2017) rule of thumb, out of 36 items measuring 4 constructs of this study, 15 items were deleted leaving the study with the remaining 21 items that are considered acceptable for further analysis. In essence, the measurement model was evaluated using Reliability and Validity tests (Internal consistency, Composite reliability (CR), Convergent validity and Discriminant validity).

Reliability Testing: Reliability was assessed using Cronbach's Alpha for internal consistency, Composite reliability (CR) in PLS-SEM were computed for all constructs. The results exceeded the recommended threshold of 0.70 (Hair et al., 2019) indicating satisfactory reliability. This implies that the items used to measure each construct were consistent in capturing the underlying dimensions of EE, SS, and BP.

Validity Testing: Convergent validity and discriminate validity were examined to ensure that the measurement model was appropriate. Convergent validity was assessed through the Average Variance Extracted (AVE). All constructs achieved AVE values greater than 0.50, demonstrating that the items explained more than 50% of the variance of the latent variables. Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio, which confirmed that constructs were distinct from each other (Fornell and Lackers, 1981). Hair *et al.*, 2019 also recommend an AVE value of 0.50 higher as evidence satisfactory validity. The complete Results of the CA, CR and AVE are shown in figure 1 and table 2 below.

Measurement Model Assessment (Outer Model Assessment)

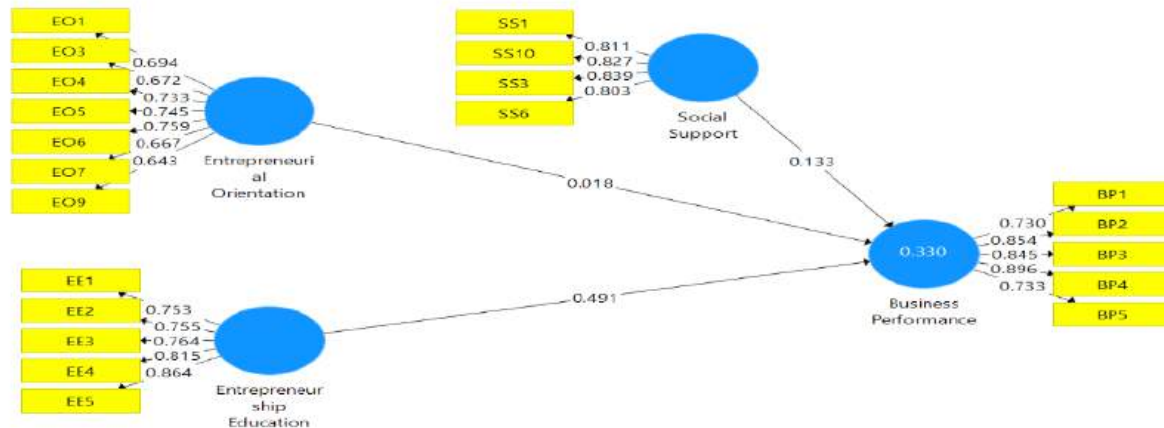


Table 2: Reliability and Validity of Constructs

Constructs	Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Business Performance	BP1	0.73	0.87	0.91	0.66
	BP2	0.85			
	BP3	0.85			
	BP4	0.90			
	BP5	0.73			
Entrepreneurship Education	EE1	0.75	0.84	0.87	0.50
	EE2	0.76			
	EE3	0.76			
	EE4	0.82			
	EE5	0.86			
Social support	SS1	0.81	0.84	0.89	0.67
	SS10	0.83			
	SS3	0.84			
	SS6	0.80			

Source: Field Survey, 2025

From table 2, all items with lower loadings were removed from the analysis due to some measurement issues, all other indicators have loadings of up to 0.60 indicating item reliability in measuring their respective reflective latent constructs.

4.2.2 Structural Model Assessment (Inner Model Assessment)

Following the confirmation of the measurement model's reliability and validity, the structural models was assessed to evaluate the hypothesized relationship among constructs. This assessment involved examining multicollinearity, coefficient of determination (R^2), path coefficient (β), relevance and the moderating effect of social support. Bootstrapping with 5,000 subsamples was performed in SmartPLS. The complete results are shown in figure 2 and table 3 below.

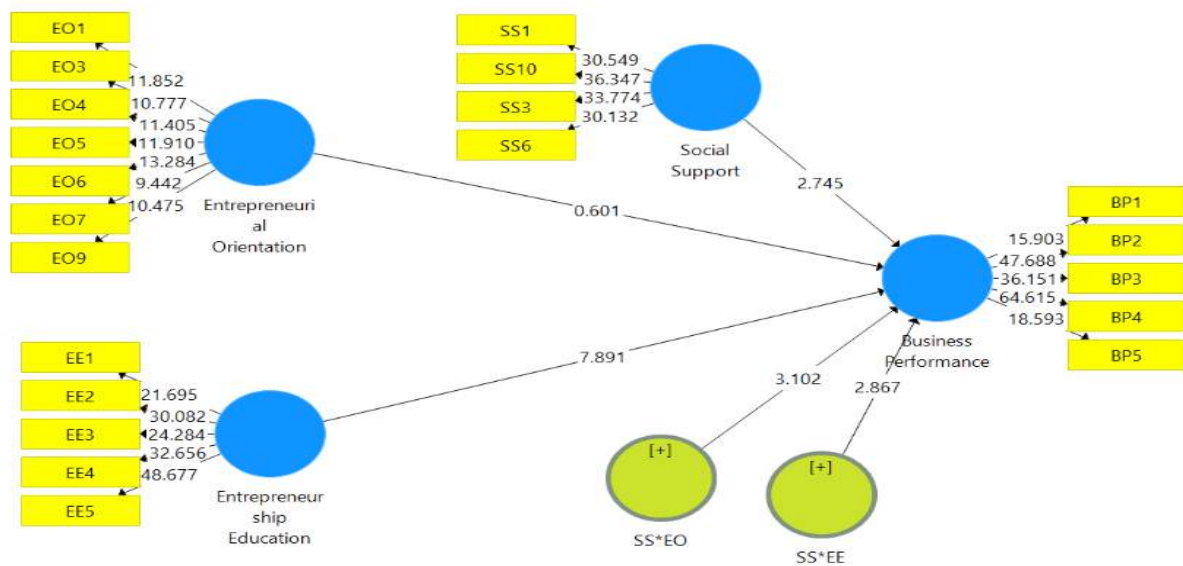


Figure 2

Table 3: Hypotheses Testing

htheses	Path	B Values	Standard Deviation	T-values	P-values	Decision
H1	EE → BP	0.43	0.05	7.89	0.05	Supported
H2	EO → BP	0.12	0.06	0.60	0.55	Not-supported
H3	EE×SS → BP (Moderation)	0.15	0.05	2.87	0.05	Supported
H4	EO×SS → BP (Moderation)	0.13	0.04	3.10	0.05	Supported

Source: Field Survey, 2025 (Smart PLS Output)

Interpretation:

H₁: (EE→BP): Supported. Entrepreneurship Education (EE) positively affects Business performance (BP) –, thereby H₁ was accepted.

H₂: (EO →BP): Not supported. Entrepreneurship Orientation (EO) positively affects BP. Not significant.

H₃: (EE× SS→BP): Supported. Social support moderate EE →BP significant, thus, H₃ Accepted

H₄: (EO× SS→BP): Supported. Thus social support moderate EO →BP

Coefficient of Determination (R^2)

Table 4: Results and Interpretation of Coefficient of Determination

Endogenous Construct	R^2	Interpretation
Business performance (BP)	0.33	Moderate

Source: Authour's analysis using Smart PLS (2025)

From table 4, the coefficient of determination (R^2) was used to assess the explanatory power of the model. The R^2 value for business performance was 0.33, suggesting that 33% of the variance in business performance is explained jointly by entrepreneurship orientation, and social support. According to chin (1998), this represents a moderate explanatory power in PLS-SEM.

Discussion of the Structural Model Result

The estimates revealed that entrepreneurship education has a positive effect on business performance, indicated by a coefficient of 0.43 and its statistical significance at 5% level. These results underscore the critical role of education in equipping women entrepreneurs with the skills and knowledge needed to navigate business challenges effectively. Training programs focusing on financial literacy, marketing strategies, and operational management likely empower women to make informed decisions, leading to improved business outcomes. This finding aligns with studies by Martin, McNally, and Kay (2013), Schmidt et al., (2022), Deng & Wang, (2023), Jan et al., 2023) which emphasize the transformative impact of entrepreneurship education on business performance. The significant relationship highlights the importance of expanding access to high-quality, tailored training programs to support women entrepreneurs, particularly in regions with structural barriers to business growth. However, the result of entrepreneurship orientation did not have a significant effect on business performance of women- owned businesses in Kano and Kaduna states. This suggests that innovativeness, proactiveness, and risk-taking as key dimensions of EO, may not directly translate into improved financial outcomes. This finding is contrary to much existing literature that identifies EO as a key determinant of firm performance, for instance (Lumpkin and Dess, 1996; Wiklund & shepherd 2005; Covin & Wales, 2019). The insignificance of EO in this study highlights the importance of contextual factor in Northern Nigeria, where women entrepreneurs face resources, socio-cultural, and institutional constraint indicating that without adequate resources and supportive environment, entrepreneurship orientation alone may not enhance women's business performance.

Conclusion and Recommendation

Conclusion

This study concludes that entrepreneurship education is a critical driver of business performance in Kano and Kaduna states with social support playing a vital moderating role, particularly in enhancing the effects of education. The findings underscore the important of investing in both human capital development and supportive ecosystem to enable women to grow sustainable enterprises. In addition, entrepreneurship orientation dimensions, do not directly translate into improved financial outcomes. The moderate R^2 value of 0.33 reflects the complexity of factors influencing business performance. It suggests that while Entrepreneurship Education and Social Support are significant predictors, external factors such as regulatory frameworks, market conditions, and access to financial capital also play a substantial role. Addressing these external influences in future studies and interventions will provide a more comprehensive understanding of how to enhance women's entrepreneurial

success. The research contributes to existing literature by highlighting the contextual nuances of women's entrepreneurs in North-western Nigeria.

To foster improved business performance among women entrepreneurs, the key recommendations targeted policymakers, stakeholders, and the women entrepreneurs themselves. These recommendations include: expansion of access to entrepreneurship training where policymakers and NGO'S are encouraged to prioritize expanding access to entrepreneurship education, particularly in rural and underserved areas, where women often face significant barriers. Training programs should focus on practical business skills, including financial literacy, business planning, digital marketing, and operational management. Furthermore, strengthening formal social support structure was recommended. This entails, establishing formal mentorship programs that connect women entrepreneurs with experienced business leaders who can provide guidance on growth strategies and market navigation. On the part of the women entrepreneurs, they are encouraged to actively seek out mentorship and networking opportunities to enhance their knowledge, build strategic partnerships, and access critical resources. Joining professional networks and women's business groups can facilitate peer-to-peer learning and collaboration. Lastly, continuous training and re-training - a commitment to lifelong learning is vital for sustained business success. Women entrepreneurs should engage in formal training programs, workshops, and online courses to stay updated on market trends, digital tools, and innovative practices which can help them to tap into broader markets and improve their competitiveness.

References

- Abbey, A., Abramis, D. J., & Caplan, R. D. (1985). Effects of Different Sources of Social support and Social Conflict on Emotional Well-Being. *Basic and Applied Social Psychology*, 6(2), 111–129. https://doi.org/10.1207/s15324834basp0602_2
- Adams, J., Khan, H. T., Raeside, R., & White, D. (2007). *Research Methods for Graduate Business and Social Science Students*. New Delhi: SAGE Publications.
- Ahl, H. (2006). Why Research on Women Entrepreneurs Needs New directions. *Entrepreneurship Theory and Practice*, 30(5), 595-621.
- Akinyemi, F.& Adejumo, O. (2017). Entrepreneurial Motives and Challenges of SMEs Owners in Emerging Economies: Nigeria & South Africa. *Advances in Economics and Business*. 5. 624-633. 10.13189/aeb.2017.051105.
- Alberti, F., Sciascia, S., and Poli, A. (2004). Entrepreneurship Education: Notes on an Ongoing Debate. In: *14th AnnualIntEnt Conference*, Italy, July 4-7.
- Aliyu, M. S. (2021). Determinants of Entrepreneurial Success Among Women in North-Western
- Aydin, H. (2021). Market Orientation and Product Innovation: The Mediating Role of Technological Capability. *European Journal of Innovation Management*, 24, 1233-1267. <https://doi.org/10.1108/ejim-10-2019-0274>.
- Barney, J. (1991) Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17, 99-120. <http://dx.doi.org/10.1177/014920639101700108>
- Barrera, M. (1986). Distinctions between Social Support Concepts, Measures and Models. *American Journal of Community Psychology*, 14, 413-445. <https://doi.org/10.1007/BF00922627>
- Baron, R.& Markman, G. (2003). Beyond Social Capital: The Role of Entrepreneurs' Social Competence in Their Financial Success. *Journal of Business Venturing*. 18. 41-60. 10.1016/S0883-9026(00)00069-0.
- Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education* (3rd ed.). Chicago: University of Chicago Press. <http://dx.doi.org/10.7208/chicago/9780226041223.001.0001>
- Black, L.& Corbin, B.& Warburton, T.& Campbell, A. The contribution of 'world view' to pupils' attitudes on enterprise, entrepreneurship and entrepreneurial learning.
- Bosma, N., Acs, Z. J., Autio, E., Coduras, A., & Levie, J. (2009). *The Global Entrepreneurship Monitor United Kingdom 2008 Executive Report*.
- Bradshaw, Y. W., Castellino, J., & Diop, S. (2015). Women and the informal economy: Challenges and opportunities. *African Development Bank*.

<https://www.afdb.org/sites/default/files/documents/publications/women-and-the-informal-economy-challenges-and-opportunities-24901.pdf>

- Brush, C. (1992). Research on women business owners: Past trends, a new perspective and future directions. *Entrepreneurship Theory and Practice*, 16(4), 5-30.
- Brush, C. G., Carter, N. M., Gatewood, E. J., Greene, P. G., & Hart, M. M. (2006). *Women and entrepreneurship: Contemporary classics*. Edward Elgar Publishing.
- Brush, C. G., de Bruin, A., & Welter, F. (2009). A Gender-Aware Framework for Women's Entrepreneurship. *International Journal of Gender and Entrepreneurship*, 1(1), 8-24.
- Chikezie, I. N., & Nwosu, K. C. (2020). Women entrepreneurs in Nigeria: An overview of opportunities, challenges and the role of information and communication technology. *Journal of Global Entrepreneurship Research*, 10(1), 1-16.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–336). Lawrence Erlbaum Associates.
- Clappaert, B. (2012). The missing entrepreneurs: Policies for inclusive entrepreneurship in Europe. OECD Publishing. <https://doi.org/10.1787/9789264169352-en>
- Clappaert, L. (2012). Women entrepreneurs: An untapped potential for economic growth. World Economic Forum.
- Creswell, D. J., & Creswell, J. W. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Fifth Edition ed.). California 91320, United Kingdom: SAGE Publications.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Creswell, J.W., & Plano, V.L. (2010). *SAGE Handbook of mixed methods Research* (3rd ed). Sage publications.
- De Bruin, A., Brush, C. G., & Welter, F. (2006). Advancing a framework for coherent research on women's entrepreneurship. *Entrepreneurship Theory and Practice*, 30(5), 725-738.
- Dora, M., Musvoto, S., & Chikodzi, D. (2018). Entrepreneurship as a critical driver of economic growth: Perspectives and practices from Zimbabwe. *Journal of Economics and Behavioral Studies*, 10(5), 209-221.
- Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, 50(4), 1051-1079.
- Ekpe, E. O., Razak, A. A., & Mat, N. (2013). Women entrepreneurship and sustainable development in Nigeria: The role of management education. *International Journal of Business and Management*, 8(24), 1-12. <https://doi.org/10.5539/ijbm.v8n24p1>
- Ekpe, I. O., Razak, A. A., & Mat, N. (2013). Entrepreneurial opportunities, gender, and entrepreneurship development in Nigeria. *International Journal of Business and Commerce*, 2(11), 9-19.
- Eteng, C. U. (2016). Entrepreneurship education and the emergence of women entrepreneurs in Nigeria. *Journal of Education and Practice*, 7(19), 111-116.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Gupta, V.K., Wieland, A. M., & Turban, D. B. (2019). Gender Characterization in Entrepreneurship: A Multi-Level Investigation of Sex-Role Entrepreneurs. *Journal of small business management*, 57(1), 131-153.
- Global Entrepreneurship Monitor. (2018). GEM 2017/2018 Global Report. Babson College, Universidad Del Desarrollo, and London Business School.
- Global Entrepreneurship Monitor. (2020). GEM 2019/2020 Global Report. Babson College, Universidad Del Desarrollo,
- Global Entrepreneurship Monitor. (2020). Global entrepreneurship monitor: Women's report 2020/2021. Retrieved from <https://www.gemconsortium.org/report/womens-report-2020-2021>
- Global Entrepreneurship Monitor. (2020). Women's entrepreneurship 2019/2020. <https://www.gemconsortium.org/report/womens-entrepreneurship-20192020>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis* (7th ed.). Pearson.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). Sage Publications. <https://doi.org/10.1007/978-3-030-80519-7>.
- Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M. (2019) When to Use and How to Report the Results of PLS-SEM. *European Business Review*, 31, 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hammawa, M. A., & Hashim, A. H. (2015). Women entrepreneurs in Nigeria: Challenges and prospects. *American Journal of Social Sciences and Humanities Research*, 1(4), 143-150.

- Hassan, A. M., & Almubarak, F. A. (2016). Women entrepreneurs in the Arab world: Characteristics, constraints, and perspectives. *Journal of Developmental Entrepreneurship*, 21(02), 1650009. <https://doi.org/10.1142/s1084946716500099>
- Hattab, H. W. (2023). Assessing the Entrepreneurship Ecosystem in Egypt through a Gender Lens. *Journal of Entrepreneurship and Project Management*, 8(1), 1–27. <https://doi.org/10.47941/jepm.1174>
- Hisrich, R.D., et al (2009). Entrepreneurship African Edition. Great Britain: McGraw-Hill Custom Publishing.
- Hisrich, R.D., Peter, M.P., & Sheperd, D.A. (2021). Entrepreneurs (11th ed.). McGraw-hill Education.
- Huang, Y, Lia, P, Wang, J and Lia, K (2022), Innovativeness and Entrepreneurial Performance of Female Entrepreneurs, *Journal of Innovation & Knowledge* 7 (2022) 100257
- International Labour Organization. (2017). Women and men in the informal economy: A statistical picture. International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---gender/documents/publication/wcms_626831.pdf
- International Labour Organization (2022). National Assessment of Women's Entrepreneurship Development in Nigeria https://www.ilo.org/wcmsp5/groups/public/---africa/---ro-abidjan/---ilo-abuja/documents/genericdocument/wcms_863586.pdf
- Isaacs, E., Visser, K., Friedrich, C., & Brijlal, P. (2017). Entrepreneurship Education and Venture Creation: The Role of Relevance, Knowledge, Duration and Feasibility. *South African Journal of Higher Education*, 31(1), 197-216.
- Jones, C., & English, J. (2004). A Contemporary Approach to Entrepreneurship Education. *Education and Training*, 46, 416-423. <http://dx.doi.org/10.1108/00400910410569533>.
- Kaplan, R. and Norton, D. (1992) The Balanced Scorecard—Measures That Drive Performance. *Harvard Business Review*, 79.
- Kline, R. B. (2011). Principles and Practice of Structural Equation Modeling (3rd ed.). *Guilford Press*.
- Kourilsky, M. L. and W. B. Walstad (1998), "Entrepreneurship and Female Youth: Knowledge, Attitudes, Gender Differences and Educational Practices," *Journal of Business Venturing*, Vol. 13, No. 1, 1998, pp. 77-78. doi:10.1016/S0883-9026(97)00032-3
- Kültür, G. G. (2019). Women Entrepreneurs in Turkey: An Exploratory Analysis of Women's Early Entrepreneurial Activity and Sectoral Preferences. *Journal of Entrepreneurship and Innovation in Emerging Economies*, 5(2), 174-189.
- Krejcie, R.V. and Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30, 607-610. <https://doi.org/10.1177/001316447003000308>
- Lahey, B., & Cohen, S. (2000). Social Support Theory and Measurement. *Handbook of Social Support and the Family*, 25-42.
- Lock, A. (2015). Entrepreneurship and Economic development: The Empowerment of Women Entrepreneurs. *Journal of Developmental Entrepreneurship*, 20(02), 1550008. <https://doi.org/10.1142/s1084946715500085>
- Mair, J., Noboa, E. (2006). Social Entrepreneurship: How Intentions to Create a Social Venture are Formed. In: Mair, J., Robinson, J., Hockerts, K. (eds) *Social Entrepreneurship*. Palgrave Macmillan, London. https://doi.org/10.1057/9780230625655_8
- Malmi, T. & Brown, D.A (2008), Management control systems as a package—Opportunities, challenges and research directions, *Management Accounting Research*, Volume 19, Issue 4, 2008, Pages 287-300, ISSN 1044-5005,
- Martin, B.C., McNally, J. J. & Kay, M.J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes, *Journal of Business Venturing*, Volume 28, Issue 2, 2013, Pages 211-224, ISSN 0883-9026,
- Minniti, M., & Naudé, W. (2010). What Do We Know About the Patterns and Determinants of Female Entrepreneurship Across Countries? *The European Journal of Development Research*, 22(3), 277-293.
- Mozumdar, L.; Hagelaar, G.; van der Velde, G. and Omta, S.W.F.; (2020), Determinants of the Business Performance of Women Entrepreneurs in the Developing World Context, *Multidisciplinary Scientific Journal*
- Mthimunya, M. A., Dube, L., & Maphalala, M. C. (2021). The Role of Entrepreneurship Education and Self-Efficacy in Predicting Women's Entrepreneurial Intentions and Actions in South Africa. *Gender & Behaviour*, 19(4), 17062-17083.
- Nabi, G., Linán, F., Fayolle, A. and Krueger, N. (2017). The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda. *Academy of Management Learning & Education*, 16, 277-299. <https://doi.org/10.5465/amle.2015.0026>
- Onjewu, A.-K. E., Haddoud, M. Y., & Nowiński, W. (2021). The effect of entrepreneurship education on nascent entrepreneurship. *Industry and Higher Education*, 35(4), 419-431.



- Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2017). The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation. *European Economic Review*, 92, 353-368.
- Owoeye, A. (2025). Entrepreneurship, Growth Drivers, and Economic Development: The Roles of Small-Medium Enterprises (SMEs) in Sustainable Development in Nigeria. *International Journal of Research and Innovation in Social Science*. IX. 6518-6531. 10.47772/IJRISS.2025.905000504.
- Park, S.H. and Luo, Y. (2001), Guanxi and organizational dynamics: organizational networking in Chinese firms. *Strat. Mgmt. J.*, 22: 455-477. <https://doi.org/10.1002/smj.167>.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley
- Schaltegger, S., & Wagner, M. (2011). Sustainable Entrepreneurship and Sustainability Innovation: Categories and Interactions. *Business Strategy and the Environment*, 20, 222-237. <https://doi.org/10.1002/bse.682>
- Schumpeter, J.A. (1934) *The Theory of Economic Development: An Inquiry into Profits, Capital, Credits, Interest, and the Business Cycle*. Transaction Publishers, Piscataway.
- Shane, S., & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25(1), 217-226.
- Sozen & O'Neill, (2018). An Exploration of the Motivations Driving New Business Start-up in the United States Craft Brewing Industry
- Stam, W., & Elfring, T. (2008). Entrepreneurial orientation and new venture performance: The moderating role of intra- and extraindustry social capital. *Academy of Management Journal*, 51(1), 97-111. DOI: 10.5465/AMJ.2008.30744031.
- Teece, D.J., Pisano, G. and Shuen, A. (1997) Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18, 509-533. [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- Udeh, N. I. (2012). The Theory and Practice of Entrepreneurship. *Ufedora Global Enterprise Nigeria*.
- Uwantege, E. J., & Mbabazi, D. (2015). The status of women entrepreneurship in Rwanda. *International Journal of Business and Commerce*, 4(11), 25-42.
- Uzuegbunam, C. (2016). Female Entrepreneurs and Rural Development in Nigeria: A Study of Selected rural communities in Nsukka (1999-2014) North-East Nigeria. *Journal of Entrepreneurship, Management and Innovation*, 12(4), 7-29.
- Rauch, A., Wiklund, J., Lumpkin, G. and Frese, M. (2009) Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory Practice*, 33, 761-787. <http://dx.doi.org/10.1111/j.1540-6520.2009.00308.x>
- Samadifard, F. & Damirchi, E. S. (2018). The relationship between perception of social interaction, perceived social support and social acceptance with aggression among adolescents. *Journal of Research and Health*. 8. 38-46. 10.29252/acadpub.jrh.8.1.38.
- Vogel, D & Wei, M. (2005). Adult Attachment and Help-Seeking Intent: The Mediating Roles of Psychological Distress and Perceived Social Support. *Journal of Counseling Psychology*. 52. 347-357. 10.1037/0022-0167.52.3.347.
- Wilcox, J. B., Bellenger, D. N., & Rigdon, E. E. (1994). Assessing nonresponse bias in mail surveys. *Journal of Marketing Research*, 31(3), 408-417. <https://doi.org/10.1177/002224379403100306>
- World Bank. (2015). World development report 2015: Mind, society, and behavior. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/20536/9781464804795.pdf>
- World Bank. (2021). Women, Business and the Law 2021
- World Economic Forum. (2012). Empowering women entrepreneurs through information and networks.
- Yamane, T. (1967), "Statistics. An Introducing Analysis". 2nd Ed, Harper & Row Ltd. New York, USA.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41. https://doi.org/10.1207/s15327752jpa5201_2
- Zivkovic, S. (2014). Women entrepreneurs in Northern Nigeria: A survey of motivations, success factors and challenges. *Journal of Research in Gender Studies*, 4(1), 92-111.