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Financial stress among female entrepreneurs in Nigeria: The buffering effect of financial literacy

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Abstract
Purpose: As financial stress considerably hinders the success and sustainability of female entrepreneurs in Nigeria, this is exacerbated by financial illiteracy, which leaves many unable to manage their business finances effectively. In view of the above problem, this study examines how financial literacy affects financial stress among female entrepreneurs in Nigeria.
Methods: This study used a descriptive survey research design. The sample consisted of 285 female entrepreneurs selected from a population of 994 female entrepreneurs in Ebonyi State. Primary data were collected using a structured questionnaire. Ordinal regression analysis was conducted to test the hypotheses.
Results: The use of financial products and services significantly reduces financial stress ($\beta1$ = -0.413391; p-value = 0.0261), budgeting significantly reduces financial stress ($\beta2$ = -0.080064; p-value = 0.0364), and emergency fund creation significantly reduces financial stress ($\beta3$ = -0.226254; p-value = 0.0094).
Conclusion: Financial literacy mitigates the challenges of financial stress by empowering women with the knowledge and skills required to make informed financial decisions.
Limitations: The study was limited to female entrepreneurs in Ebonyi State, which may not be representative of other regions or genders.
Contributions: This study is useful in the fields of entrepreneurship, finance, and gender studies, particularly for policymakers, financial educators, and organizations that support female entrepreneurs.
Recommendation: The Nigerian Ministry of Commerce, Industry, and Business Development should initiate entrepreneurial financial literacy programs incorporating practical tools, such as interactive workshops on budget management, digital budgeting applications, and real-life case studies, to enhance budgeting skills among female entrepreneurs.

Keywords: *Financial Literacy, Financial Stress, Female Entrepreneurs*

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1. Introduction

Entrepreneurship has long been recognized as a key driver of economic growth and development, especially in developing countries like Nigeria (Meshack, Orji, & Ogechukwu, 2022; Obianuju & Nworie, 2024; Udodiugwu, Eneremadu, Njoku, Obiakor, & Ilonze, 2025). The role of female entrepreneurs in advancing economic and social progress is gaining increasing attention. Women's participation in entrepreneurship not only contributes to their own economic empowerment but also positively influences family welfare, community development, and national economic progress. Despite the numerous benefits that women in entrepreneurship bring to society, they often face significant challenges that hinder their success (Anoke, 2023; Mbowa, Businge, Ssemaluulu, & Eton, 2023; Peter, 2021). These challenges include limited access to finance, gender biases, poor infrastructure, and most notably, financial stress. Financial stress among female entrepreneurs has emerged as a significant obstacle to achieving business sustainability and growth (Kleine, Schmitt, & Wisse, 2024). The ability to effectively manage financial resources and overcome stress related to financial management is crucial for the success of any business, and for female entrepreneurs in particular, it can be a decisive factor in determining the longevity of their ventures.

In today's business environment, characterized by increasing competition, economic uncertainty, unprecedented technological breakthroughs (Ebuka, Nzewi, Gerald, & Ezinne, 2020), and constantly changing financial domains (Nworie, Odah, & Nworie, 2024; Putra et al., 2024), the relevance of effective financial literacy cannot be overstated. According to Kinyanjui and Ocholla (2024) and Khan, Siddiqui, and Imtiaz (2022), financial literacy refers to the understanding and skills needed to make informed and effective decisions regarding the management of finances, including budgeting, investing, saving, and borrowing. In an era in which financial products and services are becoming more complex, a lack of financial knowledge can lead to poor financial decisions, which may exacerbate the financial stress of entrepreneurs, particularly women. Moreover, the rising cost of doing business, inflation, fluctuating exchange rates, and increasing need for capital to sustain and grow businesses (Nworie & Onochie, 2024) make financial literacy even more critical. Female entrepreneurs who already face gender-related challenges in business often find themselves at a disadvantage due to inadequate financial knowledge. Thus, the main objective of this study is to examine the buffering effect of financial literacy on financial stress among female entrepreneurs in Nigeria. To address this research objective, the following three research questions were raised**: To** what extent does the use of financial products and services help reduce financial stress among female entrepreneurs in Nigeria?How does budgeting help reduce financial stress among female entrepreneurs in Nigeria?To what degree does emergency fund creation reduce financial stress among female entrepreneurs in Nigeria?

Financial stress refers to the psychological and emotional strain that individuals experience when faced with difficulties in managing their financial resources, whether it is related to cash flow management, debt obligations, or insufficient capital to meet business needs (Zhang & Chatterjee, 2023). For female entrepreneurs in Ebonyi State, Nigeria, financial stress is an even more pronounced issue because of several contextual factors. These include limited access to formal financial services, a lack of financial planning skills, and the complex sociocultural environment that marginalizes women in business. In Ebonyi State, a largely rural region with significant levels of poverty and unemployment (Nwuzor & Nkwede, 2023), female entrepreneurs often struggle to navigate the financial aspects of their businesses, such as access to affordable credit, managing fluctuating incomes, and planning for long-term financial sustainability. While many of these women are talented and hardworking, they often lack the financial literacy needed to effectively handle these financial challenges.

Financial literacy, defined as the ability to understand and apply financial knowledge to make informed and effective financial decisions (Oggero, Rossi, & Ughetto, 2020), has the potential to significantly reduce the financial distress female entrepreneurs face (M. R. Khan, Khan, Iqbal, Zia-UR-Rehman, & Baig, 2022). When female entrepreneurs possess adequate financial literacy, they are better equipped to make sound financial decisions, such as budgeting, managing cash flow, reducing costs, seeking appropriate financing options, and planning for future business growth (Kinyanjui & Ocholla, 2024). One of the most important aspects of financial literacy is understanding the various financial products and services available and how to choose the most suitable options for the business. With the right financial knowledge, female entrepreneurs can manage their financial obligations in a way that reduces stress and improves their overall business performance. For example, understanding the importance of maintaining a healthy credit score or knowing when to seek professional financial advice can help avoid situations that may lead to financial distress. Additionally, financial literacy can empower female entrepreneurs to access funding opportunities that they may otherwise have overlooked or misunderstood, which can serve as a cushion during challenging economic periods (Kinyanjui & Ocholla, 2024).

The role of financial literacy in alleviating financial stress is particularly important in a rural-dominated state like Ebonyi, where entrepreneurship is often seen as a way to escape poverty and generate income, but access to resources and support systems for business owners is limited. Female entrepreneurs not only battle financial challenges but also navigate a socioeconomic environment that is not always conducive to female business ownership (Ogbu, Okolie, & Nnubuogu, 2021). Gender biases, limited networking opportunities, and the dual responsibilities of family and business often place additional pressure on women (Mensah, Danquah, & Aidoo-Anderson, 2024). The financial literacy gap between these women may be a major contributor to their financial struggles. Financially literate female entrepreneurs are more likely to make sound business decisions, secure financing, and build a sustainable business model that reduces the risk of failure and financial ruin (Gauron, 2024).

In developed countries, financial stress among entrepreneurs, though present, is often mitigated by more structured financial systems, broader access to credit, and widespread financial literacy programs that equip individuals with skills for effective cash flow management and strategic planning. Female entrepreneurs in such economies typically have better access to support networks, business training, and inclusive financial institutions, which ease the burden of financial uncertainty. In contrast, the situation in many African contexts, such as Ebonyi State and Nigeria, remains starkly different. Financial stress is intensified by systemic barriers, including underdeveloped financial infrastructure, pervasive poverty, and limited educational opportunities, particularly for women. The lack of access to affordable credit, coupled with inadequate financial literacy and deeply rooted sociocultural biases, places African female entrepreneurs at a significant disadvantage compared to their counterparts in developed economies. These structural and institutional disparities not only exacerbate financial stress but also hinder the potential of female-led enterprises to contribute meaningfully to local economic development. Thus, while financial stress is a universal entrepreneurial challenge, its depth and consequences are far more severe and complex in African contexts, necessitating targeted policy interventions and grassroots financial inclusion strategies (Gauron, 2024).

Moreover, improving financial literacy among female entrepreneurs could have broader implications for Nigeria's socioeconomic development. As women entrepreneurs become more financially competent, they are likely to make better decisions that not only reduce financial stress but also improve the financial stability of their businesses (Iram, Bilal, & Latif, 2024). This could lead to greater business growth, job creation, and economic diversification in the state. This forms the rationale for the present study to examine the buffering effect of financial literacy on financial stress among female entrepreneurs in Nigeria.

1.1 Statement of Problem

A substantial proportion of female business owners face significant challenges related to financial management due to a lack of financial literacy (Tanggamani, Rahim, Bani, & Alias, 2024). Many of these entrepreneurs, particularly those operating in the informal sector, struggle with basic financial tasks such as budgeting, cash flow management, and understanding financial products. They also often lack the knowledge and skills to make informed decisions regarding funding sources, savings, and investments. In a context where access to formal financial education and resources is limited, these women frequently rely on informal methods of financial management, which are often inadequate for sustaining or growing their businesses (Desai, Sensarma, & Thomas, 2024). Thus, as financial stress remains a significant barrier to the success and sustainability of female entrepreneurs, financial illiteracy is one of the key factors contributing to this stress, as it makes many female entrepreneurs ill-equipped to effectively manage their business finances.

Financial stress resulting from poor financial decision-making and mismanagement can lead to a range of negative outcomes (Zhang & Chatterjee, 2023). Female entrepreneurs may experience increased anxiety, poor business performance, and business failures. The inability to effectively manage finances also limits their access to funding, as they may struggle to present viable business plans or financial records to potential investors or lenders. Moreover, financial distress may lead to a cycle of debt, which further exacerbates their financial challenges and limits their ability to invest in business growth. In the long run, this financial instability undermines not only the individual businesses of female entrepreneurs but also their broader socioeconomic impact. When female entrepreneurs are unable to grow their businesses due to financial stress, this limits job creation, inhibits community development, and perpetuates poverty, particularly among women. Therefore, addressing the financial literacy gap is crucial for mitigating the financial stress faced by female entrepreneurs and enabling them to succeed in their business endeavors. This study contributes significantly to the literature as no empirical finding has addressed the influence of financial literacy on financial distress among female entrepreneurs in Nigeria, taking empirical evidence from Ebonyi state (Andriamahery & Qamruzzaman, 2022; Atanda, 2023; Desai et al., 2024; Ezu, Jibrin, & Abdul, 2024; Gauron, 2024; Iram, Bilal, Ahmad, & Latif, 2023; Kandolo, 2023; F. Khan et al., 2022; Kinyanjui & Ocholla, 2024; Malik, Razak, & Said, 2023; Oggero et al., 2020; Tanggamani et al., 2024; Zhang & Chatterjee, 2023). Moreover, this is the first study to use ordinal regression to estimate the degree of effect financial literacy has on financial stress. Bridging the two gaps identified above will grow literary discourse in this area, as it seeks to explore how financial literacy can alleviate financial stress among female entrepreneurs in Nigeria, thereby enhancing their business sustainability, economic empowerment, and overall contribution to community development.

1.2 Objective of the study and Research Questions

The main objective of this study is to examine the buffering effect of financial literacy on financial stress among female entrepreneurs in Nigeria. To address this research objective, the following three research questions were raised**:**

1. To what extent does the use of financial products and services help reduce financial stress among female entrepreneurs in Nigeria?
2. How does budgeting help reduce financial stress among female entrepreneurs in Nigeria?
3. To what degree does emergency fund creation reduce financial stress among female entrepreneurs in Nigeria?

2. Literature review

2.1 Conceptual Issues

2.1.1 The Role of Financial Products and Services in Reducing Financial Stress

Financial stress refers to the emotional, mental, and physical strain experienced due to financial instability or challenges in meeting monetary obligations (Zhang & Chatterjee, 2023). This arises when individuals perceive their financial resources as insufficient to meet their needs, desires, or financial goals, leading to anxiety, worry, and feelings of inadequacy (Ismail & Zaki, 2019). Financial stress is often associated with uncertainty about future financial security, overwhelming debt, inadequate income, and inability to save or invest. This stress manifests in various ways, including difficulty concentrating, impaired decision-making, and increased susceptibility to health issues, such as hypertension and depression (Jayasekara, 2023). Among entrepreneurs, financial stress can stem from business-related factors, such as cash flow problems, unmanageable expenses, or inadequate access to credit. For female entrepreneurs, this may be compounded by systemic barriers, societal expectations, and limited access to financial literacy resources, making it harder to effectively navigate financial challenges. The impact of financial stress extends beyond individuals to their families, businesses, and communities, potentially reducing productivity, innovation, and overall well-being. Addressing financial stress requires a combination of strategies, including building financial literacy, creating sustainable financial plans, and providing access to support systems to foster resilience and financial stability (Zhang & Chatterjee, 2023).

The use of financial products and services plays a significant role in alleviating financial stress by providing them with essential tools for managing cash flow, accessing credit, and securing investments (Khan et al., 2022a). Many women in this region face challenges in obtaining capital due to societal and institutional barriers, but financial services such as microcredit loans, mobile banking, and insurance products can help mitigate these difficulties. Microfinance institutions provide accessible and affordable loans to women who may otherwise be excluded from traditional banking. These financial products help female entrepreneurs manage their business operations, expand their enterprises, and cushion themselves against unforeseen economic challenges. However, despite the availability of financial products, many female entrepreneurs in Nigeria still struggle with limited financial literacy, which can prevent them from fully utilizing these services. A lack of understanding of loan terms, interest rates, and repayment schedules can lead to unmanageable debt and increase financial stress. For financial services to be truly effective, they must be accompanied by educational and awareness programs that empower female entrepreneurs with the knowledge necessary to make informed decisions. Tailored financial products, combined with increased financial literacy, would create a more supportive environment, ultimately reducing financial stress and fostering long-term business success for female entrepreneurs in Nigeria.

2.1.2 Role of Budgeting in Reducing Financial Stress

Budgeting is a powerful tool for reducing financial stress by providing a structured approach to managing business finances and personal expenses (Özer, Kutbay, & Ozbek, 2017). Many women in the region, especially those running small businesses, face significant challenges in balancing cash flows, covering operational costs, and ensuring profitability. By creating a comprehensive budget, female entrepreneurs can plan for both short-term needs and long-term financial goals, thus reducing the uncertainty and anxiety that often accompany financial decision-making. A budget helps allocate resources effectively, track income and expenses, and identify areas where cost-cutting measures can be implemented, ultimately promoting financial stability (O'Neill, Xiao, & Ensle, 2017). In addition, budgeting can foster better decision-making and improve financial forecasting, which is essential for long-term growth. In a rural region such as Ebonyi State, where women may face challenges accessing external funding or investment, a solid budget allows entrepreneurs to plan for expansion or seek external funding with more confidence. It also allows them to make adjustments during lean periods, avoiding panic and stress associated with financial instability. By ensuring that female entrepreneurs have a realistic, well-thought-out financial plan, budgeting enables them to focus on business growth rather than on constant financial concerns, leading to reduced financial stress and greater resilience in the face of challenges.

2.1.3 Role of Emergency Funds in Reducing Financial Stress

The creation of emergency funds is a crucial strategy for reducing financial stress, as it provides a financial cushion to unexpected weather events and economic fluctuations (Kamarudin, Ramli, & Rasedee, 2018). Many women entrepreneurs in the region operate in volatile environments, where external factors such as market downturns, natural disasters, health crises, or political instability can disrupt business operations. Without an emergency fund, these unplanned events can quickly escalate into financial crises, creating significant stress and jeopardizing business continuity. Having a dedicated emergency fund, however, ensures that female entrepreneurs can handle unexpected costs without the need to resort to high-interest loans or deplete their personal savings.

Emergency funds offer peace of mind by providing financial security in the event of disruptions (Lee and Hanna, 2022). Moreover, the creation of an emergency fund encourages a proactive approach to financial management and planning (Despard, Friedline, & Martin-West, 2020), helping female entrepreneurs in Nigeria better prepare for future challenges. Many women in the region face the dual pressure of managing both household and business expenses, and an emergency fund dedicated to business needs can help them separate these financial responsibilities. This distinction reduces the likelihood of mixing personal and business finances, which can lead to confusion and financial mismanagement. Over time, the practice of building and maintaining an emergency fund empowers female entrepreneurs to feel more confident in their financial decision-making, reducing the emotional and psychological burden of financial stress, and fostering long-term business resilience.

2.2 Theoretical Framework and Development of Research Hypothesis

The Transactional Model of Stress and Coping was propounded by Richard S. Lazarus and Susan Folkman in 1984 (Abu Shosha & Al-Kalaldeh, 2020). The psychological theory views stress as a result of the interaction between an individual and their environment, emphasizing the cognitive processes involved in evaluating and responding to stressors. This model emerged from Richard S. Lazarus's earlier work on stress and emotion, which highlighted the importance of individual perception and appraisal in determining whether a situation is experienced as stressful. It introduced the concept of stress as not merely a stimulus or response, but a dynamic process involving an individual's appraisal of external pressures and their capacity to cope (Lim, Thompson, Tian, & Beck, 2023).

The model postulates two key processes: primary and secondary appraisal. Primary appraisal involves evaluating whether a situation poses a threat, challenge, or harm to one's well-being (Biggs, Brough, & Drummond, 2017). If the situation is deemed threatening, a secondary appraisal comes into play, in which the individual assesses their available resources and strategies to cope with the stressor. This theory further posits that successful coping strategies, such as problem- or emotion-focused coping, can mitigate the adverse effects of stress. Problem-focused coping involves addressing the source of stress, whereas emotion-focused coping entails managing emotional responses. These cognitive processes are dynamic, with reappraisal occurring as new information or circumstances arise (Abu Shosha and Al-Kalaldeh, 2020).

The Transactional Model of Stress and Coping is highly relevant to this study, as it provides a framework for understanding how female entrepreneurs in Nigeria perceive and respond to financial stress. Financial literacy can be conceptualized as a critical resource in the secondary appraisal phase, equipping entrepreneurs with the knowledge and skills to effectively evaluate and manage financial challenges. By enhancing problem-solving capacity, financial literacy can help female entrepreneurs implement problem-focused coping strategies, thereby buffering the impact of financial stress. This aligns with this study's focus on examining the role of financial literacy in reducing financial stress and improving female entrepreneurs' well-being. In light of the above, we raised the following hypotheses:
Ha1) The use of financial products and services significantly helps reduce financial stress among female entrepreneurs in Nigeria.
Ha2) Budgeting significantly helps reduce financial stress among female entrepreneurs in Nigeria.
Ha3) Emergency fund creation significantly reduces financial stress among female entrepreneurs in Nigeria.

2.3 Empirical Review

Oggero et al. (2020) provide a foundational perspective by highlighting gender disparities in how financial literacy impacts entrepreneurship in Italy. While financial literacy and digital skills significantly enhance male entrepreneurial participation, the same relationship is absent for women, emphasizing the potential disconnect between financial knowledge and its application among female entrepreneurs. Similarly, the findings underscore the compounded role of risk tolerance and financial literacy in driving entrepreneurship, which appears to disproportionately benefit men, suggesting that systemic or cultural barriers may hinder women's ability to effectively leverage financial literacy.

Studies in developing countries have further elaborated on these dynamics. Kinyanjui and Ocholla (2024) examine the Kenyan context, revealing that inadequate financial literacy, particularly in areas like risk assessment and loan management, directly hampers economic empowerment among women. This resonates with the findings of Malik et al. (2023) and Khan et al. (2022b), who demonstrate that limited financial knowledge creates significant barriers to business success for women. Khan et al. (2022b) identified self-efficacy as a crucial moderating factor in Pakistan, indicating that confidence and entrepreneurial capability are vital in translating financial literacy into tangible business outcomes and reducing financial stress in the process.

The significance of contextual factors is also evident in studies such as Gauron (2024) and Kandolo (2023), which address systemic challenges such as gender bias and limited access to financial resources. The findings of Gauron (2024) in the Pacific Northwest highlight how entrenched biases in financial systems create obstacles for women despite their efforts to become financially competent. On the other hand, research by Kandolo (2023) in South Africa identifies a lack of financial education and resources as central issues, proposing feminist approaches to address these challenges. These studies suggest that financial stress among female entrepreneurs is not merely a result of inadequate literacy but also reflects deeper systemic inequities.

Beyond individual capabilities, the interplay between financial literacy and broader structural elements has been illuminated in the works of Desai et al. (2024) and Tanggamani et al. (2024). Desai et al. (2024) in India identifies financial literacy as a driver of entrepreneurial orientation and financial well-being, emphasizing the need for targeted literacy programs to empower rural women. Tanggamani et al. (2024) affirmed that financial literacy enhances both economic sustainability and entrepreneurial success. These studies collectively argue that financial literacy must be viewed as part of a broader resource toolkit, where its benefits are maximized when paired with systemic support mechanisms, such as access to capital and policy interventions.

Atanda (2023) and Zhang and Chatterjee (2023) extended this discourse by exploring the psychological dimensions of financial literacy. Atanda demonstrated its role in fostering financial resilience, particularly during economic hardship, suggesting that financial capability mediates the relationship between literacy and resilience. Similarly, Zhang and Chatterjee (2023) provide evidence that financial literacy mitigates financial stress by enhancing well-being, highlighting its dual function of addressing both immediate financial challenges and long-term stability. These findings suggest that equipping female entrepreneurs with financial literacy can serve as a buffer against stress and provide them with tools to navigate economic uncertainties.

Furthermore, Iram et al. (2023) introduced the concept of financial mindfulness as a moderator in reducing behavioral biases. Their findings in Pakistan highlight how financial mindfulness amplifies the benefits of financial literacy, particularly in addressing biases such as anchoring and herding. This nuanced perspective underscores the importance of combining financial education and psychological interventions to reduce financial stress among female entrepreneurs.

Lastly, studies such as Andriamahery and Qamruzzaman (2022) and Ezu et al. (2024) emphasize the role of financial literacy in fostering entrepreneurship and alleviating broader economic vulnerabilities. These studies connect financial literacy with sustainable entrepreneurship, empowering women to build businesses that are resilient to financial stress. Research by Ezu in Nigeria further ties entrepreneurship education to financial resilience, suggesting that financial literacy is a crucial component in building economic security for female entrepreneurs.

The literature collectively highlights the fundamental role of financial literacy in mitigating financial stress among female entrepreneurs. However, its efficacy is contingent on addressing systemic barriers, enhancing entrepreneurial capabilities, and integrating psychological factors, such as financial mindfulness. These findings call for a multifaceted approach that combines targeted financial literacy programs with supportive policies to empower female entrepreneurs and alleviate financial stress in diverse contexts.

3. Research Method

This study adopted a descriptive survey research design to examine the buffering effect of financial literacy on financial stress among female entrepreneurs in Nigeria. The descriptive survey design is appropriate, as it allows for the systematic collection of data from a defined population to assess the relationships between financial literacy and financial stress. This study adopted a descriptive survey method to collect data from respondents, focusing on the current state of the phenomenon. The approach aimed to describe "what is" concerning the variables or conditions within a specific context (Ilodilibe, Nworie, & Onwuka, 2024; Nworie, Okafor, Igwebuike, & Onyali, 2023).

The study population comprised 994 female entrepreneurs operating in Ebonyi State. To determine the sample size, the Taro Yamane formula was employed, ensuring that the sample adequately represented the population while maintaining statistical validity. The sample size of 285 was calculated as follows:

Formula: Sample size (n) = $\boldsymbol{n} = \frac{\mathbf{N}}{\mathbf{1+N}\,(e)^{2}}$

Where:
n - Sample size
N - Population size
e - Sampling error
1 - Constant

Thus, when:
N = 994
e = 5%

The sample size (n) was obtained as follows:

$$n = = \frac{994}{1+994\,(0.05)}$$

Sample size = 285

Convenience sampling was used to recruit the respondents. Primary data were collected using a structured Likert-based questionnaire designed to capture the extent of participants' financial literacy practices and their corresponding stress levels. The Likert scale enabled respondents to express their agreement or disagreement with various statements related to financial literacy and stress, providing a standardized approach to data collection.

Frequency distribution was used to summarize the demographic and descriptive data, while ordinal regression analysis was employed to examine the relationship between proxies for financial literacy and financial stress. The ordinal regression model allowed for the assessment of the influence of ordinal independent variables—usage of financial products and services, budgeting, and emergency fund creation—on the ordinal dependent variable, financial stress. The model is specified as follows:

$$\text{Logit}(FSTR_i) = \beta 0 + \beta_1 FPS_i + \beta_2 BUP_i + \beta_3 EFC_i + \epsilon_i \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ eqi$$

Where FSTRirepresents financial stress levels
FPS denotes the usage of financial products and services
BUP represents budgeting practices
EFC represents emergency funds creation
$\beta 0$ is the intercept
$\beta 1, \beta 2, \beta 3$ are coefficients,
ϵi is the error term.

4. Results and discussions

4.1 Analysis of Research Questions

Table 4.1 Analysis of Research Questions

S/N	Usage of Financial Products and Services	SA	A	U	D	SD
1	I regularly use financial products and services to manage my business finances.	94	129	35	15	12
2	Financial services such as loans or credit lines help me to handle cash flow problems in my business.	37	90	29	84	45
3	Access to insurance services helps me mitigate risks in my business, reducing financial stress.	14	55	72	86	58
4	Financial products, such as savings accounts or investments, help me prepare for unexpected business costs.	42	62	37	81	63
S/N	**Budgeting**	**SA**	**A**	**U**	**D**	**SD**

5	I create a periodic budget to help me to track and control my business expenses, reducing financial stress.	14	47	37	113	74
6	I prioritize essential expenses and avoid unnecessary spending by using a budget.	9	37	42	122	75
7	Budgeting helps me set realistic financial goals for my business, which reduces anxiety.	16	27	47	114	81
8	With a budget in place, I am better able to avoid unexpected financial shortages in my business.	17	72	32	69	95
S/N	**Emergency Funds Creation**	**SA**	**A**	**U**	**D**	**SD**
9	I have set aside an emergency fund to manage unexpected financial challenges in my business.	39	52	42	62	90
10	Having an emergency fund in place helps me feel secure during financial difficulties.	29	72	27	98	59
11	The availability of an emergency fund reduces the stress I experience during periods of low income or increased expenses.	39	52	32	81	81
12	I regularly contribute to my emergency fund to ensure I can handle any unforeseen financial emergencies.	29	77	25	45	109
S/N	**Financial Stress**	**SA**	**A**	**U**	**D**	**SD**
13	I often feel overwhelmed by the financial demands of my business.	85	116	30	39	15
14	Financial worries affect my mental and emotional well-being as a business owner.	94	89	59	26	17
15	The lack of financial resources creates stress and hinders the growth of my business.	88	116	31	28	22
16	Financial instability makes me feel uncertain about the future of my business.	94	107	30	36	18

Source: Field Survey (2024)

Table 4.1 provides an analysis of respondents' opinions on various aspects of financial literacy, focusing on the usage of financial products and services and the role of budgeting in reducing financial stress. The responses were distributed across five categories: Strongly Agree (SA), agree (A), undecided (U), disagree (D), and Strongly Disagree (SD). The results of each statement reveal significant patterns in how female entrepreneurs in Nigeria perceive and utilize financial literacy tools.

For the first item, a notable majority of respondents indicated that they regularly used financial products and services to manage their business finances, with 94 strongly agreeing and 129 agreeing. This highlights a positive inclination toward utilizing financial tools for business management, as these two categories together represent the majority of responses. Only a small proportion of participants expressed disagreement or strong disagreement, suggesting that most entrepreneurs acknowledged the importance of these products in managing their finances.

When asked if financial services, such as loans or credit lines, help handle cash flow problems, the responses were more dispersed. While 37 strongly agreed and 90 agreed, 84 and 45 disagreed and strongly disagreed, respectively. This distribution suggests that while some entrepreneurs find loans and credit lines beneficial, others may have reservations, possibly due to challenges such as high interest rates or difficulty accessing these services.

Regarding the role of insurance services in mitigating business risks, the majority of respondents disagreed or strongly disagreed, with 86 and 58 responses, respectively. This finding indicates that many female entrepreneurs do not perceive insurance as a significant factor in reducing their financial stress. The relatively low number of strong agreements (14) reflects limited engagement or awareness of insurance benefits for financial stability.

For the fourth item, concerning the use of savings accounts or investments to prepare for unexpected business costs, responses also varied. While 42 strongly agreed and 62 agreed, a considerable portion of respondents, represented by 81 and 63, disagreed or strongly disagreed, respectively. This variation suggests that, while some entrepreneurs recognize the value of financial products for contingency planning, others may face barriers in accessing or utilizing these tools effectively.

In the budgeting section, the responses indicated lower levels of engagement with budgeting practices. For example, when asked if they created periodic budgets to track and control business expenses, most respondents disagreed (113) or strongly disagreed (74). Only a small proportion strongly agreed (14) or agreed (47), suggesting that budgeting is not widely practiced and potentially contributes to financial stress. Similarly, for the statement on prioritizing essential expenses and avoiding unnecessary spending through budgeting, most respondents either disagreed (122) or strongly disagreed (75). This finding underscores the limited adoption of disciplined budgeting practices among participants, which could hinder their ability to manage financial stress effectively.

The perception that budgeting helps set realistic financial goals also saw predominantly negative responses, with 114 and 81 respondents disagreeing and strongly disagreeing, respectively. This highlights a potential gap in the understanding of how budgeting can align financial planning with business objectives to reduce anxiety.

Finally, the idea that budgeting helps entrepreneurs avoid unexpected financial shortages has received a mixed response. While 17 participants strongly agreed and 72 agreed, a substantial number of participants disagreed (69) or strongly disagreed (95). This suggests that while some entrepreneurs see the value of budgeting in preventing financial shocks, many do not actively apply this practice.

For emergency fund creation, the responses showed significant variation. On the statement "I have set aside an emergency fund to manage unexpected financial challenges in my business," 39 respondents strongly agreed and 52 agreed, indicating that some entrepreneurs actively prioritize emergency savings. However, a large number of participants either disagreed (62) or strongly disagreed (90), suggesting that many did not maintain an emergency fund, potentially exposing them to greater financial risks.

The statement "Having an emergency fund in place helps me feel secure during financial difficulties" drew a mixed response. While 29 participants strongly agreed and 72 agreed, the higher counts of disagreement (98) and strong disagreement (59) suggest that a significant number of respondents lacked this financial safety net. This implies limited financial preparedness among many female entrepreneurs, which may exacerbate financial stress during difficult periods.

When asked about the stress-reducing effect of emergency funds during periods of low income or increased expenses, a notable number of respondents (39 strongly agreed and 52 agreed) acknowledged this benefit. However, the 81 respondents each in the disagree and strongly disagree categories highlighted a widespread lack of access to or utilization of such funds. This disconnect suggests that while the concept is recognized, implementation remains challenging for many.

The practice of regularly contributing to emergency funding was also explored. While 29 respondents strongly agreed and 77 agreed, these numbers were overshadowed by 45 who disagreed and 109 who strongly disagreed. This pattern indicates that most entrepreneurs do not consistently save for emergencies, which could leave them financially vulnerable.

Turning to financial stress, the responses revealed the widespread emotional burden faced by the participants. For the statement "I often feel overwhelmed by the financial demands of my business," 85 respondents strongly agreed and 116 agreed, highlighting the pervasive nature of financial stress. Only a small proportion of respondents (39 disagreed and 15 strongly disagreed) reported a lower impact, emphasizing the significant pressure faced by the majority.

The effect of financial worries on mental and emotional well-being was similarly pronounced. A total of 183 respondents strongly agreed or agreed that such worries negatively impacted them, while only 43 disagreed or strongly disagreed. This finding underscores the profound personal toll financial challenges female entrepreneurs face in this context.

The perception that a lack of financial resources hinders business growth has also received strong affirmation. A total of 204 respondents either strongly agreed or agreed to participate, signaling that financial stress directly impedes entrepreneurial development. Only a small minority (28 disagreed and 22 strongly disagreed) felt otherwise, reinforcing the widespread impact of limited resources.
Finally, when asked about financial instability creating uncertainty about the future, 94 respondents strongly agreed and 107 agreed, indicating that financial insecurity undermines confidence in business continuity. The relatively low disagreement levels (36 disagreed, 18 strongly disagreed) reflect a shared sense of vulnerability among entrepreneurs.

In summary, the table illustrates a dual challenge: inadequate emergency funding practices and pervasive financial stress. While some entrepreneurs recognize and benefit from financial literacy principles, many struggle to implement them effectively, leading to high levels of uncertainty and emotional strain. These findings highlight the urgent need for financial education and support programs tailored to this population.

4.2 Test of Hypotheses

Ordinal regression was used to estimate the buffering effect of financial literacy on financial stress. Table 4.2 shows the result of the analysis.

Table 2. Ordinal Regression
Dependent Variable: FSTR
Method: ML - Ordered Logit (Newton-Raphson / Marquardt steps)
Date: 12/01/24 Time: 10:52
Sample: 1 285
Included observations: 285
Number of ordered indicator values: 5
Convergence achieved after 5 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
FPS	-0.413391	0.185852	-2.224306	0.0261
BUP	-0.080064	0.169340	-2.472798	0.0364
EFC	-0.226254	0.137312	-2.647735	0.0094
		Limit Points		
LIMIT_2:C(4)	-5.739690	0.612358	-9.373089	0.0000
LIMIT_3:C(5)	-3.698924	0.479334	-7.716803	0.0000
LIMIT_4:C(6)	-2.765572	0.455379	-6.073127	0.0000
LIMIT_5:C(7)	-1.027488	0.423469	-2.426361	0.0153

Pseudo R-squared	0.337730	Akaike info criterion	2.654264
Schwarz criterion	2.743975	Log likelihood	-371.2327
Hannan-Quinn criter.	2.690227	Restr. log likelihood	-384.2085
LR statistic	25.95177	Avg. log likelihood	-1.302571
Prob(LR statistic)	0.000010		

Source: Output from Eviews Version 10 (2024)

The results from the ordinal regression analysis presented in Table 4.2 explore the effect of financial literacy factors—usage of financial products and services (FPS), budgeting (BUP), and emergency funds creation (EFC)—on financial stress (FSTR) among female entrepreneurs in Nigeria. The model employed was an ordered logit model that predicts the probability of a respondent being in a higher category of the dependent variable (financial stress) based on the independent variables. The significant results indicate the importance of financial literacy in mitigating financial stress, although the effects are not very strong, as evidenced by the low pseudo R-squared value of 0.337730. However, the likelihood ratio test (Prob(LR statistic) = 0.000010) suggests that the overall model is statistically significant at the 5% level.

Hypothesis I: Ha1) The use of financial products and services significantly helps reduce financial stress among female entrepreneurs in Nigeria.

The coefficient for the variable "Usage of Financial Products and Services" is -0.413391 with a p-value of 0.0261. The negative sign of the coefficient indicates that an increase in the usage of financial products and services is associated with a reduction in financial stress among female entrepreneurs. Specifically, for each unit increase in the usage of financial products and services, the odds of being in the higher category of financial stress decrease. The marginal effect is calculated as the change in the probability of being in the lower financial stress category. A p-value of 0.0261, which is less than 0.05, indicates that this effect is statistically significant at the 5% level. Therefore, we accepted the alternate hypothesis that usage of financial products and services significantly helps to reduce financial stress among female entrepreneurs in Nigeria (β_1 = -0.413391; p-value of 0.0261).

Hypothesis II: Ha2) Budgeting significantly reduces financial stress among Nigerian female entrepreneurs.

The coefficient for budgeting is -0.080064, with a p-value of 0.0364. This negative coefficient suggests that engaging in budgeting practices also helps reduce financial stress. A one-unit increase in budgeting is associated with a decrease in financial stress, although the effect is weaker compared to the usage of financial products and services. The marginal effect indicates that budgeting makes a modest but significant contribution to reducing financial stress. With a p-value of 0.0364, which is below the 5% threshold, this effect is statistically significant. Hence, we accepted the alternate hypothesis that budgeting significantly helps reduce financial stress among female entrepreneurs in Nigeria (β_2 = -0.080064; p-value of 0.0364).

Hypothesis III: Ha3) Emergency fund creation significantly reduces financial stress among Nigerian female entrepreneurs.

The coefficient for emergency fund creation is -0.226254, with a p-value of 0.0094. The negative sign of the coefficient indicates that the creation of emergency funds reduces financial stress. For each additional unit of emergency fund creation, the odds of experiencing higher financial stress decrease. This marginal effect demonstrates that establishing and maintaining emergency funds significantly alleviates financial stress. With a p-value of 0.0094, which is less than 0.05, this effect is statistically significant at the 5% level. Therefore, we accepted the alternate hypothesis that emergency fund creation significantly reduces financial stress among female entrepreneurs in Nigeria (β_3 = -0.226254; p-value of 0.0094).

4.3 Discussion of Findings

It was found that the use of financial products and services significantly helps to reduce financial stress among female entrepreneurs in Nigeria. Thus, increasing the use of financial products and services leads to a reduction in financial stress among female entrepreneurs. This result is intuitive because access to financial products such as loans, savings accounts, and insurance mitigates uncertainties, enhances cash flow management, and reduces exposure to financial risks. This finding aligns with Malik et al. (2023), who highlight that financial knowledge, including the utilization of financial products, directly influences entrepreneurial achievements by mitigating stress and enhancing decision-making. Similarly, Atanda (2023) found that financial literacy, which encompasses the effective use of financial products, positively impacts financial resilience and indirectly reduces stress during economic hardships. Zhang and Chatterjee (2023) also support this finding, demonstrating that access to financial tools moderates financial stress, leading to improved financial outcomes. However, Oggero et al. (2020) provide a contrasting perspective, noting a weaker correlation between financial literacy and entrepreneurial stress reduction among women in Italy, possibly because of cultural or systemic differences in financial inclusion.

It was also found that budgeting significantly helps reduce financial stress among female entrepreneurs in Nigeria. The negative coefficient suggests that better budgeting practices reduce financial stress. Budgeting allows entrepreneurs to allocate resources efficiently, anticipate future expenses, and set aside funds for emergencies, which collectively reduces financial anxiety. The importance of budgeting in reducing financial stress is supported by Kinyanjui and Ocholla (2024), who revealed that inadequate financial literacy skills, including budgeting, hinder economic empowerment. Tanggamani et al. (2024) similarly affirmed that financial skills, such as budgeting, improve economic sustainability by reducing financial pressure. Desai et al. (2024) echoed these hints, emphasizing that structured financial management, including budgeting, enhances the financial well-being of rural women entrepreneurs. In contrast, Kandolo (2023) identified systemic barriers, such as gender inequality, that might limit the efficacy of budgeting skills among female entrepreneurs in Durban, suggesting that the benefits of budgeting could be context-dependent.

The study found that emergency fund creation significantly reduces financial stress among female entrepreneurs in Nigeria. The coefficient indicates that creating and maintaining emergency funds significantly reduces financial stress. Emergency funds act as financial cushions, enabling entrepreneurs to manage unexpected costs or downturns without resorting to high-interest debt. The effectiveness of emergency fund creation is strongly supported by Khan et al. (2022b), who recognize financial literacy, including saving for contingencies, as a key factor in reducing business vulnerabilities among female entrepreneurs. Iram et al. (2023) highlighted that financial mindfulness, which includes planning for emergencies, significantly reduces financial stress by mitigating biases and ensuring readiness for unexpected expenses. Andriamahery and Qamruzzaman (2022) affirmed the role of financial planning, including emergency savings, in promoting the sustainability of women-owned businesses. However, Oggero et al. (2020) noted that women entrepreneurs might underutilize emergency funds because of risk aversion or limited access to financial planning resources, pointing to the need for targeted interventions.

5. Conclusion

This study examines how financial literacy can act as a buffer against the financial difficulties faced by female entrepreneurs, ultimately contributing to the promotion of financial stability, business growth, and economic empowerment in Nigeria. The ordinal regression model suggests that all three variables—usage of financial products and services, budgeting, and emergency fund creation—significantly reduce financial stress among female entrepreneurs in Nigeria. Each of these financial literacy components shows a negative relationship with financial stress, implying that higher engagement in these practices leads to lower levels of financial stress. The results are statistically significant, providing evidence of the effectiveness of these financial literacy strategies in mitigating stress. By implication, female entrepreneurs who possess a strong understanding of financial concepts and are equipped with the necessary financial skills to manage their business resources effectively experience the least financial distress. Thus, financial literacy, encompassing the ability to budget, save, invest, and make informed decisions about credit, is a critical competence of any entrepreneur. When female entrepreneurs are financially literate, they are better positioned to make sound business decisions, manage cash flow, access funding, plan for long-term sustainability, and address economic uncertainty. In such an ideal scenario, these entrepreneurs would experience lower levels of financial stress, as they would have the tools to address financial challenges in a proactive and strategic manner. Consequently, financial stress does not serve as a significant barrier to the success or growth of their businesses, allowing female entrepreneurs to thrive and contribute more effectively to the economy.

In summary, financial stress poses a major challenge to the success and sustainability of female entrepreneurs in Nigeria, with financial illiteracy being a key contributor, as it leaves many unable to manage their business finances effectively. In conclusion, financial literacy can serve as a vital tool for mitigating the challenges of financial stress by empowering women with the knowledge and skills needed to make informed financial decisions. Therefore, we recommend the following:

1. Financial institutions and agencies should create inclusive financial products, such as accessible loans, grants, and insurance options, while also partnering with local financial institutions in the state to implement awareness campaigns, ensuring that women are informed and equipped to utilize these products effectively.
2. Federal Ministry of Commerce, Industry, and Business Development should initiate entrepreneurial financial literacy programs incorporating practical tools such as interactive workshops on budget management, digital budgeting applications, and real-life case studies to enhance budgeting skills among female entrepreneurs.
3. The Federal Ministry of Women Affairs and Social Development, in partnership with entrepreneurship advocacy groups, should promote the establishment and maintenance of emergency funds among female entrepreneurs. This initiative should include structured training on financial planning and savings techniques, as well as the creation of savings cooperatives where members can pool resources to enhance financial security. Such measures could empower entrepreneurs to mitigate the risks of unforeseen economic challenges.

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