SOCI-ECONOMIC EFFECTS OF FINANCIAL LITERACY ON FINANCIAL INCLUSION OF WOMEN IN NIGER STATE, NIGERIA

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Abstract
This paper aims to contribute to the existing body of knowledge on the socio-economic effect of financial literacy on the financial inclusion of women. By shedding light on the importance of financial literacy and the barriers women face, policymakers, financial institutions, and organizations can develop targeted strategies and interventions to promote women's financial inclusion, ultimately leading to improved socio-economic outcomes and gender equality. This study employed the probit regression on the National Bureau of Statistics general households’ survey data to appraise the effect of financial literacy on financial inclusion of women in Niger State. The estimation result shows that financial literacy positively and statistically influences financial inclusion options (cash at hand, purchasing power, account ownership, bank access, and credit access) in Niger state. Similarly, education status, age, and gender are determinants of financial inclusion. The study concluded that financial literacy is essential for achieving financial inclusion among women. To encourage financial inclusion among women, the study recommends that the government should initiate programs that will train women and also include financial literacy education at secondary or tertiary level to teach skills and information on how to utilize and manage financial services and products. The Central Bank should also mandate that the financial institutions to establish customer financial advisory units to educate their clients on managing and using financial products and services available to them to create wealth, thus improving living standards.

KEYWORDS: Financial Literacy, Financial Inclusion, Probit regression

JEL Classification: G2, G21, C25

1. Introduction
Achieving universal financial inclusion and stability is a task that has vast dimensions. Before now, the global central debate was on how to increase individual access to financial products and services. However, with increasing global financial accessibility, a high percentage of the population, especially in developing economies, still lacks the skills to handle their financial activities and take advantage of the available financial products and services (Andarsari and Ningtyas, 2019; Falak et al., 2022). Consequently, they are exposed to fraudulent activities from financial institutions, which can be attributed to their low level of financial literacy.

There was a remarkable increase in financial inclusion worldwide between 2011 and 2017, from 62 percent to 69 percent. In developing countries, the share increased from 54 percent to 63 percent at the same period (Demirguc-Kunt et al., 2018). Accordingly, 25% of adults globally are financially literate, 22% are from major emerging economies, and 57% are from European countries (Klapper et al., 2016). Improving financial literacy can aid in better access to financial services (CBN, 2018). Financial literacy creates financial awareness and educates consumers on the availability of financial
services, access, features, and types of financial products. It is argued that financial illiteracy advances serious concern about individuals’ as well as women’s competence to manage their financial well-being (Garg and Singh, 2018). It exposes them to financial exploitation, higher financial cost and debt, weak in seeking investment advice, experience credit difficulty, and lack of retirement plans (Fanta and Mutsonziwa, 2021). This will also have a multiplier effects on their children and generations to come. This, there will be a continuous vicious cycle of poverty among the family.


Financial literacy occupies the center stage in achieving financial inclusion in developing economies (Okere et al., 2020). It would aid households in dealing with financial emergencies arising from day-to-day financial tasks and serve as a bridge for pulling them out of poverty (Garg and Singh, 2018). Financial inclusion provides financial access while financial literacy creates awareness, financial discipline, improves savings and demand, and stimulates economic activity (Alwee Pg Md Salleh, 2015; Bongomin et al., 2018; Baker et al., 2019). Women have been disproportionately left behind when it comes to financial inclusion as well as financial literacy.

Inclusive economic growth can only be achieved where a larger proportion of the population (especially women who represent mostly half of the nation’s population) participates in the financial markets. Falak et al., 2022) claim that this is achieved only when the population understands financial products and services and builds the ability to evaluate them. The population's financial literacy level affects the financial system's stability and development (Blue et al., 2014). The larger the financial literacy, the better the financial system and the economy will be (Andarsari & Ningtyas, 2019). Likewise, it is empirically established that women’s financial literacy has an increasing effect on their financial inclusion (Ramakrishnan, 2012; Antonia & Lukas, 2017; Kaiser and Lukas, 2017; Berry et al., 2018; Bire et al., 2019).

Despite the increasing financial services and products globally and the initiation of several improved financial inclusion programs by governments around the world and international organizations (World Bank, United Nations, and Organisations for Economic Cooperation and Development), women’s financial
inclusion remains low, weak, and challenging in the developing countries like Nigeria couple with the COVID-19 pandemic and insecurity. Total financial inclusion in Nigeria has risen from 53.7 percent in 2010 to 60.3 percent in 2012 and 60.5 percent in 2014. Whereas, women’s financial inclusion is yet to be measured by stakeholders (CBN, 2018). Though this improvement was momentary, as financial inclusion tumbled to 58.4% in 2016 and stagnated at 40% in 2017, 2019, and 2020 indicating that more than half of the adult population are financially excluded, women are mostly affected as can be obvious in northern part of the nation where women are not always encouraged to go to the banks and access some financial services. Hence, financial Literacy is still at 26%, implying that 74% of Nigerians neither understand nor trust financial services and products and lack skills in using these products and services (CBN, 2021). Despite the lingering risks, this raises some significant policy inquiries on why perverse financial exclusion in Nigeria, especially at a state level and especially among the womenfolk. Nevertheless, Nigeria is not doing well compared to South Africa, with 42% financial literacy and 69% financial inclusion (access to the account), Kenya with 38% (82%), Malawi with 35% (34%), and Ghana 32% (58%) (Demirgüç-Kunt et al., 2018; Sakanko, 2020).

Hence, financial literacy and inclusion have intensified the attention due to the rising financial exclusion of women in Nigeria. At the same time, weak financial literacy of women has been argued as one of the determining factors (Shibia, 2012; Antonia & Lukas, 2017; Hussain et al., 2018; Adetunji & David-West, 2019; Falak et al., 2022). In this context, the study provides the first empirical study at the state level examining the empirical effect of financial literacy on financial inclusion in Nigeria using micro-data and financial inclusion measures from the World Bank, including account ownership, credit access, and bank access. The research is divided into five components. The first section is the introduction. Followed by section two; literature review, section three; methodology, section four is the discussion of results and findings, while section five is the conclusion and recommendations.

2. Literature Review

Financial literacy refers to empowering consumers with skills that enable them to make informed financial decisions (Shibia, 2012). Financial literacy helps individuals use and manage their scarce resources more effectively and choose financial services and products that best suit and meet their needs, while financial education teaches skills and knowledge on how to manage this scarce resource (Nelson & Wambugu, 2008). Financial inclusion is the access to an easy, effective, and efficient financial system that an individual household can trust.

This study is built on (Simpson and Buckland, 2009) financial literacy theory. They argue that a narrow understanding of individuals' financial services and products is responsible for their failure to appreciate the potential benefits of participation and shy away. Hence, individuals must be educated on the roles and benefits of financial products and services to improve
the financial system. The current empirical studies support the affirmative, including (Falak et al., 2022; Lahiri and Biswas, 2022). They established that improving financial literacy increases the likelihood of financial inclusion.

Using Smart PLS, Liu et al. (2021) discovered a diminishing relationship between financial literacy and financial inclusion in China. Dynamic panel approaches were used by Hussain et al. (2021), and the results show that financial literacy has a beneficial impact on financial inclusion. Financial literacy, financial inclusion, and savings were all explored by Morgan and Long (2020), they found that financial literacy has statistical significance and beneficial consequences on financial inclusion and savings. Using the structural equation model, Bongomin et al. (2020) concluded that financial literacy greatly benefits financial inclusion. Likewise, Adetunji and David-West (2019) in their findings also revealed that financial literacy is a significant determinant of financial institutions' formal and informal savings patterns. Kodongo (2018) employed Probit and fixed effect regression analysis and ascertained that financial literacy improves formal financial access. OLS approaches were used by Antonia et al. (2018) and Antonia & Lukas (2017), who found a statistically significant positive association between financial literacy and financial inclusion. Shen et al. (2018) adopted partial least squares and found that financial literacy positively affects financial inclusion. Bongomin et al. (2018) employed MedGraph excel software and discovered that financial literacy significantly affects financial inclusion in rural Uganda. Okello et al. (2016) employed a similar strategy and came to the opposite conclusion: financial literacy has no direct effect on financial inclusion. Furthermore, Shibia (2012) examined the relationship between financial literacy and financial access in Kenya using Multinomial Probit regression and obtained that financial literacy strongly influences financial access.

Although there are several studies on financial inclusion and financial literacy globally, few documented researches are available in Nigeria. And with regards to women, scholarly documents seemed unavailable. Garg and Singh, (2018) used OLS, examined financial inclusion and financial literacy in Nigeria, and found that financial literacy is determined by financial inclusion in Nigeria. However, this study is conducted at the state level and only concentrated on the womenfolk, differentiating it from the previous.

3. Methodology

This study used the National Bureau of Statistics (2018/2019) general household survey-panel data in Nigeria in collaboration with the World Bank Group. The National Bureau of Statistics (NBS) is one of Nigeria's major household data collection banks, with branches in every state. The survey-panel data covered all the states in Nigeria except the Bornu state in North-East Nigeria. However, this study extracted data for financial literacy and financial inclusion indicators of women in every household (access to financial institutions, credit, ownership of account). Since the data are binary, the data collected were analyzed using the probit model. The
model is specified in equation 1. Where $FI$ is the financial inclusion, $j$ represents financial inclusion indicators, $FL$ is used for financial literacy, $X$ connotes control variables in the model, $\alpha$ is the constant variable, and $\delta$ and $\beta$ are the coefficients estimated.

$$FI(j) = \alpha + \delta FL + \beta X$$

Equation 1 expressed a functional relationship between financial inclusion and financial literacy. The model is formulated based on the (Simpson and Buckland, 2009) theoretical framework and adapted (Antonia et al., 2018) methodology. The Probit model is given as follows;

$$Pr\left(\frac{FI}{X} = 1\right) = \beta_0 + \beta_1 FL_i + \beta_2 X_i + \mu_i$$ (2)

Where: $Pr\left(\frac{FI}{X} = 1\right) = \text{Probability of the financial inclusion, } FI = \text{Response variable, } FL \text{ and } X_i = \text{Explanatory variables vector, } \beta_0 = \text{Intercept of the model, } t, \beta_1 - \beta_2 = \text{parameters estimated Vector and } \mu_i = \text{stochastic term}$

According to Demirguc-Kunt et al. (2018), financial inclusion is having access to financial institutions or banks, account ownership, and credit. Financial inclusion is also influenced by educational attainment, age, and gender (Bongomin et al., 2018; 2020; Sakanko et al., 2018). Equation (3) specified financial inclusion, financial literacy, and other financial inclusion determining variables estimated.

$$FI(j) = f(FL, Edu, Age, Gen)$$ (3)

Where: $FI = \text{Financial literacy, } Edu = \text{Educational status of respondents, } Age = \text{Age, Gen = Gender}$

$$FI = (AWA, A2b, A2c)$$

(4)

Where financial inclusion is measured as AWA is the account ownership, $A2b$ represents access to a bank, and $A2c$ is given as access to credit.

The estimated econometrics model is presented in equation 5:

$$Pr\left(\frac{FI(j)}{X} = 1\right) = \delta_0 + \delta_1 FL_i + \delta_2 EDU_i + \delta_3 AGE_i + \delta_4 GEN_i$$ (5)

4. Results and Discussions

Table 1 shows the result of the probit regression. The result revealed that financial literacy has a positive and statistically significant effect on the financial inclusion measured by bank access, account ownership, and credit access. Educational status is a positive and significant determinant of account ownership and access to the bank. Still, it is negatively reported for access to credit. At the same time, age is a positive and significant determinant of credit availability and a declining determinant of account ownership and access to a bank in Nigeria. The dash (-) signifies the insignificance of the variable.

<table>
<thead>
<tr>
<th>ACCOUNT OWNERSHIP (AWA)</th>
<th>MODELS</th>
<th>FL</th>
<th>EDU</th>
<th>AGE</th>
<th>GEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.727***</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>0.474***</td>
<td>0.133***</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.340***</td>
<td>0.139***</td>
<td>-0.015***</td>
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</table>
From Table 1, a unit-level increase in financial literacy would lead to a probability of a 73% increase in the ownership of accounts, a 39% increase in access to banks, and a 21% increase in access to credit. A percentage increase in financial literacy would cause a cumulative probability of 1.33% improvement in financial inclusion among households in Niger state.

Correspondingly, improving educational qualifications would bring about a probability of 13% and 12% increases in financial inclusion (account ownership and access to bank) while decreasing the access to credit by 8%. Furthermore, an appreciation in household age deflated account ownership and access to credit by a probability of 2% and inflated access to credit by 1%. Lastly, the gender of the household decreases the account ownership and access to credit by a probability of 24% and 12%.

Financial literacy is positive and statistically significant obtained with financial inclusion measured by account ownership, access to a bank, and credit. Implying that improving financial literacy of women will promote financial inclusion in Niger State. Educating individual households on skills and knowledge of how to use and manage available financial services and products is one of the necessary conditions for achieving financial inclusion in Nigeria. The outcomes affirmed by (Antonia and Lukas, 2017; Antonia et al., 2018; Morgan and Long, 2020; Hussaini et al., 2021; Lahiri and Biswas, 2022; Falak, 2022), financial literacy positively influence financial inclusion.

Education status positively and significantly influences the financial inclusion options (account ownership and access to bank) but inversely affects the access to credit and is statistically significant. Meaning an increase in educational qualifications promotes financial inclusion among women. Therefore, education status is a positive determinant of account ownership and bank access, while it is a negative determinant of
access to credit. Blue et al. (2014); Alwee Pg Md Salleh (2015); Sakanko (2018) findings confirm these relationships.

Age illustrates a diminishing and significant effect on account ownership and access to a bank. Signifying that aging decreases household account ownership and access to banks. Therefore, age is a deflating determinant of financial inclusion among women. This collaborates with the discovery of (Sakanko, 2018). Whereas age influences positively on access to credit. Indicating that an individual could still borrow from financial institutions for financial businesses or health even at old age. Therefore, age is an increasing determinant of access to credit. The study also discovered some barriers to financial literacy and inclusion for women amongst which are; Socio-cultural factors; Educational and informational gaps; Lack of targeted financial products and services; Limited access to technology and digital financial services; Strategies to Promote Financial Literacy and Inclusion among Women; Financial education and literacy programs; Policy interventions and regulatory frameworks; Collaboration between stakeholder; Importance of digital financial literacy

5. Conclusion and Recommendations

The study examined the effect of financial literacy on financial inclusion among women in Niger States using the National Bureau of Statistics general household survey data. The structured model employed was analyzed using the probit regression techniques. The empirical results revealed that financial literacy among women is a positive and statistically significant determinant of financial inclusion options (account ownership, bank access, and credit access) among women in Niger state. Similarly, education status, age, and gender are determinants of financial inclusion in Niger.

This article has shed light on the socio-economic effects of financial literacy on the financial inclusion of women in Niger State. The findings indicate that financial literacy plays a crucial role in empowering women and enhancing their access to financial services. The study revealed that women who possess financial knowledge and skills are more likely to engage in formal financial systems, make informed financial decisions, and effectively manage their resources.

Financial literacy programs have proven to be effective in improving the financial inclusion of women in Niger State. These programs not only provide women with the necessary knowledge and skills but also boost their confidence and self-esteem in financial matters. As a result, women are better equipped to participate in economic activities, start businesses, and contribute to the overall development of their communities.

Enhancing financial literacy among women has several positive socio-economic impacts. It promotes women's economic independence and reduces their vulnerability to poverty and financial exclusion. Financially literate women are more likely to save, invest, and access credit facilities, thereby improving their economic well-being and that of their families. Moreover, financial inclusion of women contributes to overall economic growth and reduces gender disparities.
However, it is important to note that financial literacy alone is not sufficient to achieve complete financial inclusion for women. Barriers such as limited access to financial services, cultural norms, and lack of tailored financial products tailored for women's needs still need to be addressed. Policy interventions should focus on creating an enabling environment that promotes equal access to financial services, removes gender-based barriers, and encourages financial institutions to develop products and services that cater to the specific needs of women.

In conclusion, promoting financial literacy among women in Niger State is a critical step towards achieving greater financial inclusion and empowerment. By investing in financial education programs, providing access to appropriate financial services, and addressing the underlying structural barriers, policymakers, financial institutions, and stakeholders can contribute to creating a more inclusive and equitable financial landscape for women. Ultimately, the socio-economic benefits of financial literacy for women extend beyond individuals and families, positively impacting the entire society and fostering sustainable development.

Therefore, the study recommended that

i. The government incorporates financial education in the secondary syllabus or tertiary course content to educate skills and knowledge on how to use and manage financial services and products to promote financial inclusion among youth.

ii. Educational enrollment for both gender should be encouraging and retirement plans since they influence financial inclusion.

iii. Finally, Civil Society and NGOs too should play a crucial step in helping women have access to financial literacy and financial inclusion.

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