

Integrating Financial Inclusion and Digital Literacy for Palliative support among Low-Income Earners in Imo State, Nigeria

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Abstract

Achieving financial inclusion and digital literacy represents a significant shift that connects traditional banking with underserved communities. This study examined integrating financial inclusion and digital literacy for palliative support among low-income earners in Imo State, Nigeria. The study adopted correlation research design. The population of the study comprises of all the accessible low income earners in Imo State Nigeria. As at the time of the study the entire population was 5.7 million (5.7m). Stratified sampling technique was used to select some business areas and rural communities. From these selected business areas and communities, 310 respondents with an understanding of digital financial inclusion were purposively selected and included in the study as the sample. A structured rating scale titled: Developed Financial Inclusion and Digital Literacy among Low-Income Earners (DFIDLILE) was used as instrument for data collection and the instrument was validated and reliability study carried out using Cronbach Alpha statistics and a reliability coefficient of 0.85 was obtained. In analyzing the data obtained. Pearson Correlation Coefficient was used to answer the research questions while t-test statistics at 0.05 Alpha level was used to test the null hypotheses. The findings of the study established that there is a moderate positive relationship between integrated palliative support systems and financial inclusion among low-income earners. Also, there is a high positive relationship between the developed integrated palliative support system and the economic empowerment of low-income earners with a significant relationship. Based on the above findings, the study recommended among others that efforts should be made by the government to expand the availability of digital financial solutions in urban and rural communities. This will facilitate easier access to financial services at affordable prices, thereby helping poverty alleviation.

Keywords: Integrated, Palliative, Support System, Financial Inclusion, Digital Literacy, and Low-Income Earners

Introduction

Globally, the world is becoming increasingly digital, promoting financial inclusion is paramount for every economic improvement. Digital financial inclusion has become a necessity to close the financial divide, offering essential financial services to populations that are often underserved. These technologies allow individuals, particularly in rural and low-income regions, to conduct secure, efficient, and convenient financial dealings (Ahmad, Majeed, Khan, Sohaib, & Shehzad, 2021). In addition to personal advantages, digital financial inclusion fosters extensive economic growth, encourages entrepreneurship, and assists in alleviating poverty by creating new opportunities and enhancing living conditions. By merging technology with financial services, digital wallets and mobile banking create pathways for a more inclusive and sustainable global economy (Shen, Hu, & Hueng, 2021).

Digital financial inclusion is a topic of significant interest in every economy. This is because digital financial inclusion has the potential to stimulate the digital economy and offer positive welfare benefits to people, households, businesses and government (Ahmad et al, 2021). The contemporary debate on digital financial inclusion is centered on the determinants of digital financial inclusion and its effect on society and the economy (Shen et al, 2021).

The most problematic challenge facing Nigeria economic progress is the issue of poverty alleviation with majority of the population of the country been poor and depressed. The global poverty rates have witnessed a significant reduction of over 50%, as evidenced by the data indicating that 36% of the world's population lived below the poverty line in 1990. By 2015, this figure further decreased to 10 percent, reflecting a remarkable advancement in poverty alleviation efforts (Chipunza & Fanta, 2022). Although Nigeria has made frantic and remarkable efforts in terms of poverty alleviation since 1980 to 2015. However, despite the notable decline in poverty rates, the country continues to grapple with the challenge of effectively translating economic progress into tangible development outcomes which is an indication that all poverty alleviation programs remain completely nonresponsive to bringing 82.9 million (40.1 percent) Nigerians from poverty. Nations exhibiting attributes of small size, fragility, and conflict tend to demonstrate higher poverty rates. But recently, the poverty rate in Nigeria is worse, approximately 63% in 2025 (national poverty line), affecting over 150 million people (Word Bank, 2026). Financial inclusion is seen as a means of improving the poverty rate in the country (Chipunza & Fanta, 2022).

Financial inclusion refers to the provision of accessible and affordable financial services to all individuals, particularly those from economically weaker sections of society (Ali & Ghildiyal, 2023). Conventional banking systems have historically faced challenges in reaching people in remote areas and low-income groups. The rise of financial technology, driven by digital innovation, has introduced new opportunities to bridge this gap and expand the reach of financial services.

The idea of financial inclusion was first introduced by the governor of Bank of India during their financial summit in 2005; the concept was later adopted by many within and outside India and the world over (World Bank Financial Report, 2012). The overarching goal of financial inclusion policies on a global scale is to eliminate the obstacles stemming from factors such as education, gender, age, irregular income, regulatory constraints, and geographical location. These barriers collectively impede billions of adults worldwide from accessing financial services (Chipunza & Fanta, 2022). Financial growth influences the increase in citizens' income and the advancement of digital financial inclusion through digitization holds greater significance in augmenting the earnings of impoverished individuals. Digital financial inclusion integrates digital finance with inclusive finance, thereby enhancing the well-being and effectiveness of the economy and serving as a catalyst

for mitigating poverty. On a global scale, approximately 1.7 billion individuals still lack access to financial services, with a considerable portion of the unbanked population comprising women, impoverished households residing in rural regions, or individuals not actively participating in the workforce (Corrado & Corrado, 2017; Mushtaq & Bruneau, 2019).

Digital financial inclusion has a broader scope compared to traditional finance and covers a wider demographic through the integration of digital technology and the internet. Unlike traditional finance which is limited to restricted activities such as savings, loans, and payments, digital financial inclusion utilizes digital technologies to achieve network effects without marginal costs, thus facilitating rapid and inclusive development even in remote areas. With the threshold effect enabled by the internet, digital financial inclusion promotes economic growth (Mushtaq & Bruneau, 2019).

Moreover, digital financial inclusion bridges the gap between the unbanked and underbanked populations, facilitating their access to financial services across physical, digital, and psychological domains (Mushtaq & Bruneau, 2019). In the contemporary digital era, a considerable number of individuals who were previously excluded or underserved by traditional financial systems are transitioning from cash-based transactions to digital financial platforms. This paradigm shift is facilitated by the utilization of various digital financial tools, including mobile remittances leveraging in technology. Furthermore, psychological tools such as financial education play a crucial role in empowering the financially underserved population to access a diverse array of financial products and services. Consequently, this multifaceted approach holds the potential to break the cycle of poverty (Goyal & Kumar, 2021).

Achieving financial inclusion through digital wallets and mobile banking accomplishes several objectives. It improves financial access and empowerment, making sure that marginalized groups can take part in the formal financial system (Goyal & Kumar, 2021). Furthermore, it significantly boosts financial literacy and understanding, equipping individuals to make knowledgeable financial choices. Secure and user-friendly, digital payment platforms also enhance efficiency and build trust in digital transactions, diminishing the dependence on cash economies. But the literature has paid little attention to the uneven digital financial inclusion developments in different regions of the world. This calls for an overview of the existing digital financial inclusion research and developments around the world to gain insight into digital financial inclusion trends and to chart some directions for future research.

Numerous studies have consistently demonstrated that the provision of essential financial services, including savings, payment mechanisms, and access to credit, can yield positive outcomes for individuals, potentially enhancing the well-being of impoverished populations and fostering the growth of micro, small, and medium enterprises (Iwedi, 2020). As an emerging paradigm in financial development, digital financial inclusion not only addresses the financial needs of individuals but also broadens the spectrum of financial utilization among low-income populations. This expansion can effectively alleviate instances of financial exclusion. On the one hand, credit assistance facilitated by digital financial inclusion helps overcome capital constraints for the poor, thereby promoting rural economic and industrial development (Goyal & Kumar, 2021).

The issue of extreme poverty remains prevalent in Nigeria, and one could attribute it to factors like non inclusive or sluggish growth, low human capital, labour market weakness and exposure to shocks among others. According to the Nigeria Bureau of Statistics (NBS)

(2020) the incidence of poverty in Nigeria experienced a notable increase from 27.2 percent in 1980 to 69.0 percent, before settling at 40.1 percent (equivalent to 82.9 million individuals) in 2020. Despite this concerning trend, mobile money wallets have emerged as an affordable and efficient alternative, facilitating the financial inclusion of millions of impoverished Nigerians. Particularly, formal financial services remain limited in accessibility within Nigeria, with only 4.3 commercial bank branches per 100,000 adults and 16.93 ATMs per 100,000 adults (World Bank, 2018). This dearth of banking infrastructure disproportionately affects the sizable rural population, leaving them without access to formal financial services and hampering their ability to benefit from cross-border e-commerce opportunities. Poverty alleviation problem in Nigeria has attracted numerous attentions in the academia with scholars from the field of Finance and Banking (Stolper & Walter, 2017).

Economics and Sociology supporting increased digital financial inclusion as one of the main methods of effectively alleviating poverty in Nigeria. Thus, this growing level of poverty and hardship in Nigeria can be attributed to lack of expansion of digital financial inclusion. It is in view of the foregoing that we tend to carry out the study on integrating financial inclusion and digital literacy for palliative support among low-income earners in Imo State, Nigeria.

Scope of the Study

This study covers integrating financial inclusion and digital literacy for palliative support among low-income earners in Imo State, Nigeria. It focuses on the integrated palliative support system for advancing financial inclusion and digital literacy among low-income earners. The study tries to ascertain the increased digital financial inclusion as one of the main approaches of effectively alleviating poverty and the economic empowerment of low-income earners in Nigeria. The study is carried out in Imo State among low-income earners (local traders, artisans, job men, famers and POS vendors).

Statement of the Problem

Despite numerous government and private-sector interventions aimed at alleviating poverty, a significant proportion of low-income earners continue to face economic hardship due to limited access to formal financial services and inadequate digital literacy. Traditional palliative support programs often focus on providing temporary relief through cash transfers, food distribution, or other welfare initiatives. However, these interventions frequently lack integration with sustainable financial empowerment mechanisms, resulting in short-term benefits without addressing the underlying causes of financial exclusion. The increasing digitization of financial services presents new opportunities for economic participation. However, many low-income earners lack the digital skills, financial knowledge, and technological access required to effectively utilize digital financial platforms. Consequently, they remain excluded from essential financial services such as digital banking, mobile payments, savings, insurance and credit facilities. This digital divide further exacerbates poverty, unemployment, and social inequality.

Furthermore, existing palliative support systems are often fragmented, characterized by poor beneficiary identification, inefficient distribution mechanisms, lack of transparency, and limited monitoring and evaluation (Goyal & Kumar, 2021). The absence of an integrated system that combines palliative assistance with financial inclusion strategies and digital literacy initiatives reduces the long-term effectiveness of these programs. Therefore a need to develop an integrated palliative support system that not only delivers immediate social assistance but also promotes financial inclusion and enhances digital literacy among low-income earners. Such a system could improve beneficiaries' access to digital financial services, strengthen their economic resilience, and facilitate sustainable poverty reduction.

Hence, this study examined the integration of financial inclusion and digital literacy for palliative support among low-income earners in Imo State, Nigeria.

Purpose of the study

The major purpose of this study was to investigate the integration of financial inclusion and digital literacy for palliative support among low-income earners in Imo State, Nigeria. With specific objectives as the study seeks to:

1. Determine the relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State.
2. Examine the relationship between the developed integrated palliative support system and the economic empowerment of low-income earners in Imo State.

Research Questions

The following research questions were formulated for the study

1. What is the extent of relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State?
2. What is the extent of relationship between the developed integrated palliative support system and the economic empowerment of low-income earners in Imo State?

Research Hypotheses

The following null hypotheses (H_0) guided the study:

H_{01} : There is no significant relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State.

H_{02} : The developed integrated palliative support system does not significantly improve the economic empowerment of low-income earners in Imo State.

Significance of the study

Currently, financial inclusion has become a vital catalyst for economic progress and social empowerment. Digital wallets and mobile banking play a crucial role in closing the financial gap on integrated palliative support system for advancing financial inclusion and digital literacy. Its significance includes the following: Improving Financial Accessibility and Empowerment; Boosting Financial Literacy and Awareness; Enabling Secure, Efficient, and Convenient Transactions; Promoting Economic Growth, Development, and Poverty Alleviation. Financial inclusion through digital means greatly contributes to economic progress and poverty reduction. This study is beneficial in numerous ways. It is beneficial to the following politicians, the media, community leaders, future researchers, the government, and the society at large.

Literature Review

Financial Inclusion

Financial inclusion and financial exclusion are binary terms referring to one's access to financial services. Financial exclusion can be defined as the inability to access financial services in an appropriate form. Whereas, financial inclusion is defined as having access to financial services at affordable terms to all parts of the society (Corrado & Corrado, 2017). Financial inclusion roughly consists of the following dimensions: account ownership, savings, borrowings, and insurances at formal institutions (Stolper & Walter, 2017).

The quest for digital financial inclusion began as a response to the World Bank's 2017 report which stated that nearly two billion adults globally do not have access to a bank account. This led to calls for a strategy that would bring the two billion adults into the formal

financial system. As a result, the World Bank together with national policy makers, other multilateral banks, nongovernmental organizations and private financial institutions reached a consensus that digital technology should be used to advance financial inclusion globally. This led to the term ‘digital financial inclusion’ which refers to the use of digital technologies to extend affordable formal financial services to everyone to increase the level of financial inclusion (Goyal & Kumar, 2021). Despite the growing interest in digital financial inclusion in the literature, existing studies rarely provide a comparative overview of the trends in digital financial inclusion across regions. This article extends the literature by presenting a concise overview of the existing digital financial inclusion research and developments around the world.

Financial Literacy

Financial literacy can be defined as the knowledge, skills, and ability to independently make informed financial decisions related to financial planning, wealth accumulation, debt management, and pension planning, ultimately leading to financial well-being (Shen et al., 2018). Financial literacy encompasses not only understanding financial services but also the ability and confidence to apply financial knowledge to make effective financial decisions (Stolper & Walter, 2017).

Whether someone is financially literate is often indicated by one’s knowledge and understanding about risk diversification, inflation, compound interest and numeracy related to interest rates (Stolper & Walter, 2017). To effectively use financial services, individuals should possess at least a basic understanding of these four dimensions of financial literacy. Understanding risk diversification entails comprehending the difference in risk between investing in a single stock and investing in a diversified portfolio of stocks. Inflation knowledge encompasses understanding the impact of price and income increases on purchasing power. To understand compound interest, one must grasp the concept of cumulative interest on savings. Lastly, numeracy related to interest rates relates to the ability to calculate interest payments on loans (Lusardi & Mitchell, 2014). Several antecedents influence an individual's level of financial literacy. Demographic, socio-economic, personal, and cultural characteristics all play a role (Goyal & Kumar, 2021). Age, gender, ethnicity, income, employment status, and geographical attributes are particularly influential.

Conversely, an individual's level of financial literacy significantly affects their day-to-day financial management skills (Lusardi & Mitchell, 2014). Low financial literacy, when combined with the use of financial services, can lead to high-cost borrowing, inadequate wealth accumulation, expensive credit card behavior, and financial insolvency, driven by erroneous decision-making that results in financial distress. Higher financial literacy, on the other hand, positively influences financial planning decisions, borrowing decisions, investment decisions, and financial well-being. This is facilitated through knowledge of the four dimensions of financial literacy (Goyal & Kumar, 2021).

Digital Literacy

Digital literacy is defined as “the ability to access, manage, understand, integrate, evaluate and create information safely and appropriately through digital devices and networked technologies for participation in economic and social life” (UNESCO, 2018). Individuals lacking the skills to appropriately understand and use digital devices and networked technologies are digital illiterate.

To possess basic digital literacy, one must encompass proficiency across four key dimensions: information processing skills, communication skills, problem-solving skills, and

software skills for content manipulation (European Commission, 2020). Information processing skills entail the ability to identify, locate, organize, and analyses digital information effectively. Communication skills involve engaging, interacting, and sharing resources in digital environments. Problem-solving skills encompass understanding digital needs, making informed decisions, solving conceptual problems, and addressing technical challenges. Additionally, software skills for content manipulation refer to the capability to create, edit content, produce creative outputs, and navigate intellectual property rights (European Commission, 2020).

Digital skills are strongly influenced by socio-demographic factors such as age, education, employment status, numeracy skills, and technological complexity (Mushtaq & Bruneau, 2019). These differences in digital proficiency have led to a digital divide, exacerbating inequality across communities. Bridging this divide is imperative, as enhanced digital literacy promotes digital inclusion, enabling more individuals to access technology and empowering communities socially (Ozili, 2018).

This study is based on these two theories the Technology Acceptance Model (TAM) and the Power Theory of Poverty. TAM was introduced by Fred Davis in 1989 in the realm of information systems theory. The model aims to explain the reasons behind an individual's decision to adopt a particular technology with the aim of improving their quality of life (Wolor, & Yusuf, 2022). The power theory of poverty has similarities with the Marxist ideology of poverty. This perspective sees power through the lens of control over the political and economic structures in society.

Empirical studies

Several studies have investigated the relationship between financial inclusion and the probability of entering or moving out of poverty. Many recent studies have investigated the relationship between access to financial services and poverty alleviation among the most vulnerable segments of the population. Suri and Jack (2016) used household panel data to investigate the long-run impact of mobile money on the economic welfare of individuals in Kenya. Their findings show that the use of Kenya's mobile money system, M-PESA, results in an increase in per capita consumption levels, thereby improving the efficiency of consumption allocation over time. In addition, their study estimates that about 2.0% of Kenyans are lifted out of extreme poverty, defined as individuals living on less than \$1.25 per day. However, access to panel data that used by Suri and Jack (2016) is limited.

Lal (2018) examined the impact of financial inclusion through cooperative banks on poverty alleviation in India. Through data collected from 540 people who use cooperative banks, the study concluded that financial inclusion, especially facilitated through cooperative banks, can effectively combat poverty. Access to financial products and services, such as loans, insurance, and savings, was identified as crucial in enabling poor individuals to make informed economic decisions, thereby influencing income generation and management and ultimately reducing poverty.

David, et al., (2020) investigated the impact of an inclusive financial sector on poverty reduction and income inequality in several countries. They concluded that significant increases in financial inclusion in high- and middle-income countries are associated with reduced poverty rates. They also observed that high- and upper-middle-income countries with high levels of financial inclusion exhibit lower poverty rates. However, no such relationship was found in lower-middle-income countries.

Wieser et al. (2019) conducted a study on the impact of the introduction of mobile money agents in rural Northern Uganda. Their findings showed a decrease in the percentage of poor rural households experiencing low food security after the rollout of the program. This suggests that mobile money initiatives can improve the livelihoods of the poor, especially in remote areas where access to traditional banking services is limited. However, the study did not find any significant impact on savings or overall poverty outcomes. Chinoda and Kwenda (2019) examined data from 49 countries covering the period 2004 to 2016 and identified a unidirectional causal relationship between financial inclusion and mobile phones. Similarly, Mushtaq and Bruneau (2019) use a panel dataset of 61 low- and middle-income countries, and conclude that mobile phone penetration can indeed drive financial inclusion.

Lyons et al. (2020) conducted a study examining the correlation between poverty and both financial inclusion and digital inclusion across seven developing countries in South Asia and Sub-Saharan Africa. Their research findings indicate that enhancements in various indicators of financial and digital inclusion are linked with substantial reductions in poverty, including alleviation of food insecurity. Ownership and use of traditional bank accounts emerged as the most influential factor in poverty reduction, alongside access to and use of non-bank financial institutions and mobile money accounts. However, the study revealed some spatial heterogeneity, especially between rural and urban populations.

In another study, David et al. (2020) investigated the impact of financial inclusion on poverty alleviation among smallholder farmers in Zimbabwe. They argue that financial inclusion can contribute to the achievement of several sustainable development goals, including poverty alleviation, hunger alleviation, and promoting sustainable agriculture. Using simple regression methods, the study found a strong correlation between financial inclusion and poverty reduction among smallholder farmers. The authors emphasize the importance of government policies that encourage farmers' participation in the financial sector through savings, loans, and insurance services. They also highlight the need for financial education programs targeted at farmers to improve their understanding and utilization of financial services.

Kelikume (2021) used the systematic generalized moment method to investigate the relationship between Internet usage and the impact of financial inclusion on poverty alleviation efficiency. Their findings show that as Internet usage increases, financial inclusion significantly improves poverty reduction efficiency. Bayar et al. (2021) explored the relationship between the level of Internet usage and access to financial institutions and financial markets in 11 post-communist countries in the European Union from 1996 to 2017. Their study revealed both positive and negative relationships, suggesting that increased Internet usage may increase access to financial institutions in certain countries such as Bulgaria, Croatia, Czech Republic, Hungary, and Poland, while increasing financial market access in Latvia and Slovenia.

Materials and Method

The study adopted correlation research design. The population of the study comprises of all the accessible low income earners (local traders, artisans, job men, famers and POS vendors) in Imo State Nigeria. As at the time of the study the entire population was 5.7 million (5.7m) (National Population commission, 2025). Stratified sampling technique was used to select some business and rural communities. From these selected business areas and communities, 310 respondents with an understanding of digital financial inclusion were purposively selected and included in the study as the sample. A structured rating scale titled: Developed Financial Inclusion and Digital Literacy among Low-Income Earners (DFIDLILE) was used as instrument for data collection and the instrument was validated and reliability study carried

out using Cronbach Alpha statistics and a reliability coefficient of 0.85 was obtained. In analyzing the data obtained. Pearson Correlation coefficient was used to answer the research questions while t-test statistics at 0.05 alpha level was used to test the null hypotheses. Decision rule for Pearson Correlation coefficient: A value of 0.00 – 0.19 suggested a negligible linear relationship between financial inclusion and digital literacy for palliative support among low-income earners. A value of 0.20 – 0.39 suggested a low linear relationship between financial inclusion and digital literacy for palliative support among low-income earners. A value of 0.40 – 0.59 suggested a moderate linear relationship between financial inclusion and digital literacy for palliative support among low-income earners. A value of 0.60 – 0.99 suggested a high linear relationship between financial inclusion and digital literacy for palliative support among low-income earners. The t-test was employed for testing the relationships between financial inclusion and digital literacy for palliative support among low-income earners. A test was considered to be statistically significant if the t-calculated value is greater than the t-tabulated value. Hence, the null hypothesis is therefore rejected or otherwise accepted at 0.05 alpha level.

Result

Data presentation and interpretation

Research Question 1:

What is the extent of relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State?

Table 1: Analysis of simple linear coefficient (Pearson r) of relationship between integrated palliative support systems and financial inclusion among low-income earners.

V	n	Σ	r	MR	DR	Remark	
X	310	9324	0.575	Moderate	Positive	Moderate relationship	Positive
Y	310	9323					

Variable (V), sample size (n), summation (Σ), Pearson (r), Magnitude of Relationship (MR), Direction of relationship (DR) Coefficient of relationship (R) and Remark.

Table 1 revealed the coefficient of relationship between integrated palliative support systems and financial inclusion among low-income earners. The result revealed that the obtained coefficient of relationship (Pearson r) is 0.575, as the magnitude of correlates is moderate while the direction of relationship is positive. However, the magnitude of correlates and the direction of relationship also indicated that, as one variable moderately increases, on one hand, there will be a corresponding moderate increase on the other variable. This means that, a moderate positive change in the integrated palliative support systems and financial inclusion will lead to a corresponding positive change among low-income earners. Therefore, there is a moderate positive relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State Nigeria.

Research Question 2:

What is the extent of relationship between developed integrated palliative support system and the economic empowerment of low-income earners in Imo State?

Table 2: Analysis of simple linear coefficient (Pearson r) of relationship between developed integrated palliative support system and the economic empowerment of low-income earners.

V	n	Σ	r	MR	DR	Remark	
X	310	9872	0.604	High	Positive	Moderate relationship	Positive
Y	310	9870					

Variable (V), sample size (n), summation (Σ), Pearson (r), Magnitude of Relationship (MR), Direction of relationship (DR) Coefficient of relationship (R) and Remark.

Table 2 revealed the coefficient of relationship between developed integrated palliative support system and the economic empowerment of low-income earners in Imo State. The result revealed that the obtained coefficient of relationship (Pearson r) is 0.604, as the magnitude of correlates is high while the direction of relationship is positive. However, the magnitude of correlates and the direction of relationship also indicated that, as one variable highly increases, on one hand, there will be a corresponding high increase on the other variable. This means that, a high positive change in the developed integrated palliative support system will lead to a corresponding high positive change in the economic empowerment of low-income earners. Therefore, there is a high positive relationship between developed integrated palliative support system and the economic empowerment of low-income earners in Imo State Nigeria.

Hypothesis 1:

There is no significant relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State Nigeria.

Table 3 analysis of t-test significant of Pearson r the simple linear coefficient of relationship between integrated palliative support systems and financial inclusion among low-income earners.

V	n	Σ	r	α	Df	t-cal	t-tab	Decision
X	310	9324	0.574	0.05	310-2	7.754	1.96	Reject Ho ₁ .
Y	310	9323						

Variable (V), sample size (n), summation (Σ), Pearson (r), Alpha (α), degree of freedom (df) calculated value (t-cal), tabulated value (t-tab) and; and Decision.

Table 3 shows the significance of the co-efficient relationship between integrated palliative support systems and financial inclusion among low-income earners. The result entails that the t-calculated value is 7.754 and the t-tabulated value is 1.96. It is obvious that the t-calculated value is greater than the t-tabulated value. Hence, the null hypothesis is therefore rejected. This implies that there is a significant relationship between integrated palliative support systems and financial inclusion among low-income earners in Imo State.

Hypothesis 2:

The developed integrated palliative support system does not significantly improve the economic empowerment of low-income earners in Imo State Nigeria.

Table 4 analysis of t-test significant of Pearson r the simple linear coefficient of relationship between the developed integrated palliative support system and significantly improve the economic empowerment of low-income earners.

V	n	Σ	r	α	df	t-cal	t-tab	Decision
X	310	9872	0.601	0.05	310-2	9.838	1.96	Reject Ho ₂ .
Y	310	9871			308			

Variable (V), sample size (n), summation (Σ), Pearson (r), Alpha (α), degree of freedom (df) calculated value (t-cal), tabulated value (t-tab) and; and Decision.

Table 4 shows the significance of the co-efficient relationship between the developed integrated palliative support system and significantly improve the economic empowerment of low-income earners. The result entails that the t-calculated value is 9.838 and the t-tabulated value is 1.96. It is clear that the t-calculated value is greater than the t-tabulated value. Hence, the null hypothesis is therefore rejected. Therefore, the developed integrated palliative support system significantly improves the economic empowerment of low-income earners in Imo State Nigeria.

Discussion

The extent of relationship between integrated palliative support systems and financial inclusion among low-income earners: Based on the findings of the study it was revealed that there is a moderate positive relationship between integrated palliative support systems and financial inclusion among low-income earners. This means that, a moderate positive change in integrated palliative support systems and financial inclusion will lead to a corresponding moderate positive change among low-income earners with a significant relationship. This findings is in line with the study of Wieser et al. (2019) conducted a study on the impact of the introduction of mobile money agents in rural Northern Uganda. Their findings showed a decrease in the percentage of poor rural households experiencing low food security after the rollout of the program. This suggests that mobile money initiatives can improve the livelihoods of the poor, especially in remote areas where access to traditional banking services is limited. However, the study did not find any significant impact on savings or overall poverty outcomes. Chinoda and Kwenda (2019) examined data from 49 countries covering the period 2004 to 2016 and identified a unidirectional causal relationship between financial inclusion and mobile phones. Similarly, Mushtaq and Bruneau (2019) use a panel dataset of 61 low- and middle-income countries, and conclude that mobile phone penetration can indeed drive financial inclusion.

The extent of relationship between the developed integrated palliative support system and the economic empowerment of low-income earners: Based on the findings of the study it was revealed that there is a high positive relationship between the developed integrated palliative support system and the economic empowerment of low-income earners. This means that, a high positive change in developed integrated palliative support system will lead to a corresponding moderate positive change in the economic empowerment of low-income earners with a significant relationship. This findings is in line with the study of Kelikume (2021) used the systematic generalized moment method to investigate the relationship between Internet usage and the impact of financial inclusion on poverty alleviation efficiency. Their findings show that as Internet usage increases, financial inclusion significantly improves poverty reduction efficiency. Bayar et al. (2021) explored the relationship between the level of Internet usage and access to financial institutions and financial markets in 11 post-communist countries in the European Union from 1996 to 2017.

Their study revealed both positive and negative relationships, suggesting that increased Internet usage may increase access to financial institutions in certain countries such as Bulgaria, Croatia, Czech Republic, Hungary, and Poland, while increasing financial market access in Latvia and Slovenia

Conclusion

It was established that there is a moderate positive relationship between integrated palliative support systems and financial inclusion among low-income earners. Also there is a high positive relationship between the developed integrated palliative support system and the economic empowerment of low-income earners with a significant relationship. Conclusively achieving financial inclusion and digital literacy represents a significant shift that connects traditional banking with underserved communities. By improving financial access, these digital solutions enable individuals, especially those in rural and marginalized areas, to engage with formal financial systems. This empowerment promotes self-sufficiency, allowing people to efficiently manage their finances and access vital services without depending on physical banking establishments.

Recommendation

Based on the findings of the study the following recommendations were made:

1. The Central Bank of Nigeria should devise an effective monetary policies aimed at promoting financial inclusion without charges to reduce poverty.
2. Efforts should be made by government to expand the availability of digital financial solutions in urban and rural communities. This will facilitate easier access to financial services at affordable prices, thereby helping poverty alleviation.
3. It is paramount to implement a more targeted digital finance strategy that aimed at educating low-income earners to further combat poverty, specifically those living in rural communities, on the utilization of financial services and products. This will help address the issue of financial exclusion and empower people to make appropriate financial decisions.
4. Steps should be taken to improve accessibility to financial infrastructure such as POS terminals, ATMs, and other financial products in rural communities. Efforts should be made by government to ensure that non-smartphone users can also utilize digital financial products and services.

References

- Ahmad, M., Majeed, A., Khan, M. A., Sohaib, M., & Shehzad, K. (2021). Digital financial inclusion and economic growth: Provincial data analysis of China. *China Economic Journal*, 14(3), 291-310.
- Ali, J., & Ghildiyal, A. K. (2022). Socio-economic characteristics, mobile phone ownership and banking behaviour of individuals as determinants of digital financial inclusion in India. *International Journal of Social Economics*
- Bayar, Y Gavriletea, M.D. & Păun, D., (2021). Impact of mobile phones and internet use on financial inclusion: empirical evidence from the EU post-communist countries. *Technological and Economic Development of Economy*, 27 (3), 722–741. <https://doi.org/10.3846/tede.2021.14508>
- Chinoda, T., & Kwenda, F. (2019). Do mobile phones, economic growth, bank competition and stability matter for financial inclusion in Africa? *Cogent Economics & Finance*, 7(1), 1–20. <https://doi.org/10.1080/23322039.2019.1622180>

- Chipunza, K. J., & Fanta, A. (2022). Quality financial inclusion and its determinants in South Africa: evidence from survey data. *African Journal of Economic and Management Studies*, 13(2), 177-189.
- Corrado, G., & Corrado, L. (2017). Inclusive finance for inclusive growth and development. *Current Opinion in Environmental Sustainability*, 24, 19-23. doi:10.1016/j.cosust.2017.01.013
- David, M, Steven, H.D. & Tankiso, M. (2020). Financial inclusion and poverty alleviation among smallholder farmers in Zimbabwe. *Eurasian Journal of Economics and Finance*, 8(3), 2020, 168-182 DOI: 10.15604/ejef.2020.08.03.004
- European Commission. (2020). Digital Economy and Society Index (DESI) 2020. European Commission. Retrieved from <https://ec.europa.eu/digital-single-market/en/digital-economy-and-society-index-desi>
- Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80-105. doi:10.1111/ijcs.12605
- Iwedi, M. (2020) [Financial Inclusion in Nigeria: An Evaluation of the Progress, Challenges and Trend](#). *Greener Journal of Economics and Accountancy* 8 (1), 1-5
- Joseph Rowntree Foundation (2013). Monitoring poverty and social exclusion 2013, Joseph Rowntree Foundation and the new policy institution.
- Kelikume, I., (2021) Digital financial inclusion, informal economy and poverty reduction in Africa. *Journal of Enterprising Communities People Places and Global Economics*. 15(1), 626–640
- Lal, T., (2018). Impact of financial inclusion on poverty alleviation through cooperative banks. *International Journal of Social Economics*, 45, pp. 808-828. <https://doi.org/10.1108/IJSE05-2017-0194>
- Liu, Y., Luan, L., Wu, W., Zhang, Z., & Hsu, Y. (2021). Can digital financial inclusion promote? China's economic growth? *International Review of Financial Analysis*, 78, 101889.
- Lusardi, A., & Mitchell, O. S. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal Of Economic Literature*, 52(1), 5-44
- Lyons, A, Kass-Hanna, J & Greenlee, A (2020) Impacts of financial and digital inclusion on poverty in South Asia and Sub-Saharan Africa, SSRN: <https://ssrn.com/abstract=3684265> or <http://dx.doi.org/10.2139/ssrn.3684265>
- Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion and ICT: Implications for poverty and inequality. *Technology in Society*, 59, 101154. <https://doi.org/10.1016/j.techsoc.2019.101154>
- National Bureau of Statistics (NBS). (2012). The Nigeria poverty profile 2010 report. Statistician-General of the Federation [Press briefing].
- National Bureau of Statistics (NBS). (2020). 2019 Poverty and inequality in Nigeria: Executive summary. Proshare. www.nigerianstat.gov.ng
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340. doi: <https://doi.org/10.1016/j.bir.2017.12.003>
- Sekantsi, L. P. (2019). Digital financial services uptake in Africa and its role in financial inclusion of women. *Journal of Digital Banking*, 4(2), 161-174.
- Shen, Y., Hu, W., & Hueng, C. J. (2021). Digital financial inclusion and economic growth: a cross country study. *Procedia computer science*, 187, 218-223.
- Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288-1292

- Stolper, O. A., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *Journal of Business Economics*, 87(5), 581-643. doi:10.1007/s11573-017-0853-9
- UNESCO. (2018). Global framework of reference on digital literacy skills for indicator 4.4.2: Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skill. UNESCO. Retrieved from <http://uis.unesco.org/sites/default/files/documents/draftreport-global-framework-reference-digital-literacyskills-indicator-4.4.2.pdf>
- Wieser, C., Bruhn, M., Kinzinger, J., Ruckteschler, C., & Heitmann, S. (2019). The impact of mobile money on poor rural households: Experimental evidence from Uganda (Policy Research Working Paper 8913). Washington, D.C.: The World Bank.
- World Bank (2013). Poverty reduction in Nigeria in the last decade. World Bank. <https://openknowledge.worldbank.org/handle/10986/25825>
- World Bank, (2018). Poverty and Shared Prosperity: Piecing Together the Poverty Puzzle.