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Original Article

Effects of Mobile Money and Agency Banking on Financial Inclusion in Rivers State, Nigeria

Marshal Iwedi[1], Angela Uwauma Sipoto-Pepple[2], Fikayo Mercy Onyia[3]

Department of Finance, Faculty of Administration and Management, Rivers State University Nkpolu-Oroworukwo Port Harcourt.

Abstract

This study takes a closer look at how mobile money and agency banking are influencing financial inclusion in Rivers State, Nigeria. Using a mixed-methods approach, the research combines quantitative data from 400 survey participants with qualitative insights gathered from 50 interviews and focus group discussions in five carefully chosen cities: Port Harcourt, Obio/Akpor, Khana, Eleme, and Omoku. These cities provide a diverse mix of urban, semi-urban, and rural environments. The analysis, both descriptive and inferential, shows a strong, positive connection between mobile money, agency banking, and financial inclusion, with Pearson correlation coefficients soaring above 0.98. The study also reveals demographic differences, indicating that individuals aged 30–39 and those with graduate or post-graduate degrees are using these services more frequently. On the qualitative side, participants pointed out significant challenges like gaps in digital literacy, limited agent availability in remote areas, and infrastructure issues. Overall, the findings confirm that mobile money and agency banking play a crucial role in boosting financial inclusion, though their effects vary across different population groups. The study suggests implementing targeted digital literacy programs, investing in agent networks, and providing policy support to broaden access to financial services for everyone.

Keywords

Mobile Money, Agency Banking, Financial Inclusion, Rivers State, Digital Financial Services.

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1. Introduction

Financial inclusion is a key player in driving inclusive economic growth, particularly in developing nations like Nigeria, where a large chunk of the adult population still finds itself outside the formal financial system. Despite some strides forward, around 26 percent of Nigerians roughly 28.8 million adults are still financially excluded, as highlighted by the 2023 EFInA Access to Finance Survey. This issue is even more severe in areas like Northern Nigeria and rural communities, including parts of Rivers State, where challenges such as poor infrastructure, digital illiteracy, and socio-economic inequalities are prevalent. Fortunately, mobile money and agent banking have stepped up as vital solutions to bridge these gaps. With mobile phone usage soaring to 93 percent among adults (EFInA, 2023), mobile money has revolutionized access to essential financial services. At the same time, agent banking has seen impressive growth, jumping from 4.4 percent in 2018 to 54 percent in 2023, effectively reaching those who were previously underserved or unbanked. Financial inclusion means having access to a variety of financial services like savings, credit, insurance, payments, and pensions at prices that everyone can afford, especially for low-income and rural populations (World Bank, 2023). The EFInA survey indicates that formal financial inclusion climbed from 56 percent in 2020 to 64 percent in 2023, with mobile and digital channels playing a crucial role. Interestingly, 45 percent of Nigerians tapped into digital financial services in the last year, a notable increase from 34 percent in 2020.

In Rivers State, urban areas like Port Harcourt have quickly embraced mobile banking apps and agent outlets. Yet, many rural local governments are still struggling with access and usage (Njar, 2025; Adeleke, 2024). A significant gap in digital literacy persists, particularly among women, youth, and informal sector workers, who make up the bulk of those excluded from financial services (Liu et al. 2021; Marus-Eton et al. 2025). The gender gap in financial access widened from 8 percent in 2020 to 9 percent in 2023, even as women's inclusion improved from 60 percent to 70 percent during the same timeframe (EFInA, 2023; Central Bank of Nigeria, 2023). Traditional banks find it tough to reach rural areas due to high operating costs, but agent banking and mobile money platforms provide scalable and cost-effective solutions (Nmorsi, Egungwu, & Nduka, 2024). With the backing of the Central Bank of Nigeria's

financial inclusion framework, agent banking has allowed financial institutions to collaborate with third-party agents to deliver services like deposits, withdrawals, transfers, and bill payments in underserved regions (Uwah, Udoayang, & Uklala, 2022).

However, there are still worries about service quality, security, agent liquidity, and the reliability of these systems in hard-to-reach communities (Ahmed et al., 2024). The real game-changer of mobile money and agent banking isn't just about expanding access; it's also about enhancing livelihoods, alleviating poverty, and fostering gender equity (Ayoade et al., 2023). Still, how effective these technologies are in boosting rural deposits and ensuring long-term financial inclusion, especially in places like Rivers, is an area that needs more research (Agwu, 2021). This study delves into the impact of mobile money and agent banking on financial inclusion in Nigeria, particularly focusing on Rivers State. It aims to provide solid evidence on their effectiveness, pinpoint challenges, and suggest policy recommendations to enhance inclusion, especially in rural and low-income communities.

2. Literature Review

A. Theoretical Foundations

This study looks at how mobile money and agency banking affect financial inclusion in Nigeria as such it is underpinned on the Technological Advance Model, which pulls ideas from two key theories: Rogers' Diffusion of Innovation and Davis' Technology Acceptance Model (TAM). These theories help us understand how people and organizations adopt new tech in their daily lives. The Diffusion of Innovation theory talks about how new technologies, like mobile money and agency banking, spread within a community over time. On the other hand, the Technology Acceptance Model focuses on how people's attitudes and ease of use influence whether they embrace new technology. In Nigeria, where the digital shift in banking is really picking up, these theories are especially important. Uwah, Udoayang, and Uklala (2022) examined how the COVID-19 pandemic influenced the acceptance of financial inclusion as a new normal in Nigeria's financial environment. The study found that the pandemic accelerated the shift towards digital financial services, driven by the need for contactless transactions, lockdown restrictions, and public health concerns. As a result, there was a significant increase in the use of digital banking platforms, mobile money, and other fintech solutions across different socio-economic groups in Nigeria. The authors observed that this shift brought about a growing public trust in digital channels, alongside increased awareness and usage of financial services among previously unbanked populations. They argue that the pandemic acted as a catalyst for breaking behavioral resistance to financial technology, creating an environment where financial inclusion became not just an economic policy objective but also a social necessity.

B. Conceptual Clarification

(a) Mobile Money

Mobile money is all about using your mobile device to handle financial services, which means you can send, receive, store, and manage your money without ever stepping foot in a traditional bank. It covers a variety of services, from peer-to-peer transfers and bill payments to buying airtime, saving, and even taking out micro-loans. This financial innovation has played a crucial role in closing the gap in financial access, especially in rural areas that often get overlooked. Research by Jack and Suri (2022) highlights how platforms like M-Pesa have made a real difference in reducing poverty and boosting financial stability for households in Sub-Saharan Africa. In Nigeria, fintech companies and mobile network operators team up with licensed financial institutions to provide mobile money services. These platforms help cut down transaction costs and break down geographical barriers. However, there are still hurdles to overcome, such as low digital literacy, limited smartphone access, poor network coverage, and a general lack of trust in digital finance, which can slow down adoption in rural areas (Ahmed et al., 2024). As Nigeria moves towards greater digital financial inclusion, the Central Bank of Nigeria (CBN) is working on regulatory frameworks and new initiatives, like the launch of Payment Service Banks (PSBs), to enhance the accessibility and reliability of mobile money across the nation.

(b) Agency Banking

Agency banking offers a way to extend formal banking services. It lets third-party agents handle financial tasks for licensed banks. These agents are often local shop owners or business people. They work in areas without many banks. They help with deposits, withdrawals opening accounts, paying bills, and sending money. This approach cuts

costs for banks. It also makes banking easier for people in rural areas or with low incomes. Adeleke, (2024) point out that agency banking has made financial services more available in places with few banks. In Nigeria more commercial banks and fintechs are using agent networks. The CBN's Financial Inclusion Strategy supports this growth. But there are still problems to solve. Agents sometimes run out of cash. There are risks in how they operate. Fraud is also a worry. To fix these issues, we need better ways to watch over agents and train them.

(c) Financial Inclusion

Financial inclusion means making sure people and companies can get useful and cheap financial products and services that fit their needs. This includes things like transactions, payments, savings, credit, and insurance, all provided in a responsible and sustainable way (Iwedi, 2020). It's key to cutting down poverty and boosting inclusive economic growth. In Nigeria, the National Financial Inclusion Strategy (NFIS) has guided the push for financial inclusion. This strategy aims to increase the number of Nigerians who can access formal financial services. Recent data shows progress through digital channels, though women, youth, and people in rural areas still lag behind (Iwedi, 2023). So financial inclusion isn't just a development goal. It's also a way to wider economic participation social fairness, and financial stability.

C. Empirical Review

Several empirical studies between 2019 and 2025 have examined the effect of mobile money and agency banking on financial inclusion in Nigeria. These studies have provided significant evidence on how these financial innovations are bridging the gap between the unbanked population and formal financial services. Njar (2025) investigated the influence of digital distrust on the acceptance of online transactions among adults in Cross River State, Nigeria. The study employed the Technology Acceptance Model (TAM), extended with digital distrust as a key variable, to analyze data collected from 400 respondents across urban and rural areas. Findings showed that digital distrust significantly reduces perceived usefulness ($\beta = -0.42$, $p < 0.01$) and perceived ease of use ($\beta = -0.38$, $p < 0.01$), both of which are essential predictors of behavioral intention to engage in online transactions. The study reported that 68% of participants expressed concerns about data privacy and security, with rural dwellers showing higher levels of distrust than their urban counterparts. The study opined that while digital platforms are increasingly available and internet penetration is growing, skepticism around fraud, data breaches, and system reliability remains a strong barrier to adoption. He emphasized the role of trust-building strategies such as transparent digital policies, user protection guarantees, and structured digital literacy programs in addressing this distrust. The study recommends that both policymakers and digital service providers implement targeted educational initiatives and invest in robust online security measures to foster public confidence. Similarly, some studies, like Marus-Eton et al. (2025) argued that while fintech infrastructure may exist, issues like digital illiteracy, poor connectivity, and cost barriers limit the actual usage and impact on financial inclusion. Also, Onaolapo (2015) pointed out that financial inclusion in Nigeria has often been hindered by socio-economic disparities and limited financial awareness, regardless of technological availability.

The study by Umar, Isah, and Nuhu (2024) investigated the factors that influence the acceptance of agent banking services among rural entrepreneurs in Adamawa State, Nigeria. Using the Technology Acceptance Model (TAM) as the framework, the authors identified several key barriers to the widespread adoption of agent banking in rural areas. These included low awareness of the service among potential users, lack of trust in the system, insufficient training for both users and agents, poor ICT infrastructure, and the weak competitive edge of agent banking compared to traditional banking services. Despite these challenges, the study found that agent banking services were more likely to be used frequently when users perceived them as easy to use and useful for their financial transactions. In other words, perceived ease of use and perceived usefulness were strong determinants of service acceptance, consistent with the core constructs of the TAM framework. Ayoade, Yusuf, & Bakare, (2023). The study assessed the effect of mobile money services on financial inclusion in rural areas of Southwest Nigeria. Using survey data and logistic regression analysis, findings revealed that mobile money significantly enhanced access to financial services by reducing transaction costs and overcoming geographic barriers.

Iwedi, Owakah, and Wofuru-Nyenke (2023) investigated the effect of financial technology on financial inclusion in Nigeria using quarterly time series data from 2009 to 2019, sourced from the Central Bank of Nigeria. Financial technology was proxied by point of sale (POS), automated teller machines (ATM), web banking, and mobile banking technologies, while financial inclusion was represented by the deposit ratio. The study employed the Vector Auto

Regression (VAR) estimation technique and found that web banking technology had a positive and statistically significant impact on financial inclusion. However, POS, ATM, and mobile banking technologies also had positive but statistically insignificant effects. The authors concluded that expanding fintech infrastructure and improving digital literacy would enhance financial inclusion, especially in rural areas. This finding aligns with the results of earlier studies, such as Ozili (2018), who emphasized that fintech innovations play a critical role in promoting access to financial services, especially among underserved populations.

Iwedi, Ihenacho, and Chizuru (2023) conducted a study focusing on the impact of mobile payment technology on poverty alleviation in Rivers State, Nigeria. Using a sample of 223 respondents selected through multistage and purposive sampling techniques, the study employed a structured questionnaire and analyzed the data using simple regression via SPSS (version 25.0). The results revealed a positive and statistically significant relationship between mobile payment technology and consumption expenditure, suggesting that mobile payments have the potential to enhance household welfare and reduce poverty. This finding corroborates the conclusions of Aker and Mbiti (2010), who highlighted how mobile money services can reduce transaction costs, improve savings habits, and enhance access to credit, thereby directly improving household welfare in low-income regions. Similarly, Jack and Suri (2022) provided evidence from Kenya showing that mobile money significantly lifted households out of extreme poverty by enabling better financial management and facilitating remittances.

Sodipo et al., (2021) study focused on agency banking operations among commercial banks in Niger-Delta Region of Nigeria. Through a qualitative and quantitative mixed-method approach, the researchers found that agency banking had significantly contributed to financial inclusion, particularly in underserved communities. However, they noted challenges such as fraud, lack of infrastructure, and low customer awareness. Liu et al. (2021) emphasize that behavioral adaptation to the digital economy such as embracing mobile financial technologies plays a vital role in driving sustainable financial literacy and financial inclusion. This perspective aligns closely with findings from econometric analyses of mobile money transactions between 2015 and 2021, which show that increases in the volume and value of mobile money transactions were positively associated with improvements in financial inclusion metrics, such as the number of banked individuals and mobile wallet users. CBN (2023), The report indicated that over 60% of the adult population in Nigeria had access to formal financial services, up from 48% in 2018, largely due to mobile money and agent banking initiatives. The number of registered mobile money accounts and agency banking agents grew exponentially during this period. Agent banking, on the other hand, was effective in reducing the distance to financial services but was limited by cash availability and agent liquidity issues

In the Nigerian context, Osei-Assibey (2015) emphasized that mobile payment services promote financial inclusion and income generation, especially for informal sector workers and rural populations. However, other studies, such as that of Osabutey and Jackson (2024) reinforce concerns raised by development scholars who have warned that, despite the growing availability of mobile payment platforms, infrastructural gaps, digital illiteracy, and security concerns remain major barriers to their effective role in poverty reduction. Their review highlights that mobile money services, while promising, often fail to reach the most impoverished populations due to inadequate infrastructure, lack of digital literacy, and weak policy mechanisms that fail to safeguard user privacy and integrate marginalized groups. This aligns with broader empirical evidence suggesting that mobile payment technologies can only deliver on their poverty alleviation potential when supported by policies that actively promote digital access, expand infrastructure to underserved regions, and invest in user education. The study further argues that simply providing access to mobile money is insufficient. True financial inclusion and poverty impact require intentional engagement with the socio-economic realities of those at the bottom of the pyramid, alongside coordinated efforts to build trust, ensure digital security, and create systems that prioritize the needs of local communities over external stakeholders.

D. Gaps in Literature

Despite the growing body of research on financial inclusion in Nigeria, several critical gaps like limited joint Analysis of Mobile Money and Agency Banking. Most existing studies tend to focus independently on either mobile money or agency banking as isolated financial tools. Many studies are cross sectional in nature providing only a snapshot of the current state of mobile money and agency banking and there is Sparse Literature on regulatory and policy implications as regulatory bodies like the central bank of Nigeria (CBN) have introduced guidelines on mobile

money and agent banking while academic literature often lacks an in-depth analysis of how these policies affect financial inclusion outcomes.

3. Methodology

This study looked at how mobile money and agency banking impact financial inclusion in Nigeria, focusing on five cities in Rivers State. It combined both number-crunching and interviews, which helped us get a clearer picture of how people access and use financial services. The surveys gave us solid stats on how many folks are using these services and how satisfied they are, while the interviews added personal stories and perspectives. We carried out the research in Obio/Akpor, Port Harcourt, Khana, Eleme, and Omoku. These cities were picked to represent a mix of urban, semi-urban, and rural communities in the area. The population estimates from National Population Commission showed that Obio/Akpor has around 665,000 people; Port Harcourt has 774,600; Khana has around 421,300; Eleme is 273,500; and Omoku has about 196,000 residents. We used these numbers to fairly distribute our sample size across these cities.

In total, 400 people took part in the survey, chosen using a random sampling method. We got 110 responses from Port Harcourt, 100 from Obio/Akpor, 70 from Khana, and 60 each from Eleme and Omoku. Our participants included users and non-users of mobile money and agency banking, making sure we covered different genders, ages, and income levels. This setup allowed us to compare how financial inclusion varies across different areas and backgrounds. In addition to the survey, we engaged 50 people for the qualitative part of our research. This included 15 bank agents, 8 fintech executives, 10 regulatory officials, and 17 selected participants from the survey to join focus groups. These discussions helped us understand the challenges and opportunities people face with mobile and agency banking. We gathered data using structured questionnaires and interviews, focusing on demographics, how often people use the services, accessibility, benefits, and challenges with adoption. We also looked at existing reports and surveys from the Central Bank of Nigeria, financial inclusion studies, and other relevant documents to give context to our findings. To make sure our methods were sound, we had experts in digital finance review our tools and tested them out with 20 individuals in two locations. We checked the reliability of our survey tools and analyzed the results using SPSS, looking at averages, distributions, and relationships. For the qualitative data, we pulled out themes and insights to better understand the experiences of people in these five cities.

4. Results And Discussions

A. Demographic Analysis

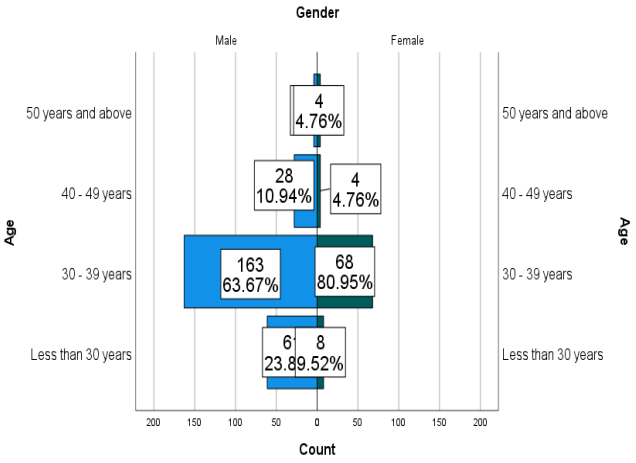

Fig-1: Pyramid for Gender and Age Distributions for the sample

Figure 1 shows who took part in the Rivers State survey on mobile money and agency banking. The chart is laid out like a population pyramid: men on the left, women on the right, sliced into four age bands—under 30, 30-39, 40-49, and 50-plus. The tallest bars sit squarely in the 30-39 bracket, with 163 men (about two-thirds of all male respondents) and 68 women (just over 80 percent of female respondents). Put simply, working-age adults dominate the sample, making it clear that this group is driving use of the new digital services. Their comfort with technology and steady need for day-to-day transactions likely explains why they outnumber both younger and older users. This

pattern mirrors national findings (EFInA, 2023) that show young adults leading the charge toward mobile financial tools.

People under 30 make up a modest slice of the sample 6 men (23.89 %) and 8 women (9.52 %). Their showing hints that students and early-career workers are starting to engage with mobile money, but their numbers lag behind the 30- to 39-year-olds, probably because paychecks are still thin and financial autonomy is still taking shape. In other words, the youngest adults may be hovering on the edge of the formal financial system, pointing to a clear opening for better education and sharper outreach by banks and fintechs. Move up to the 40-49 bracket and male users rise to 28 (10.94 %), yet only 4 women appear (4.76 %). That sharp drop suggests either a generational tech gap or jobs that keep these men and women away from agents and mobile platforms. The particularly low female figure cries out for targeted efforts especially in Rivers State's semi-urban and rural corners to keep middle-aged women from being left behind as finance goes digital.

The 50 years and above category has the least representation, with only 4 males (4.76%) and 4 females (4.76%), totaling 8 respondents. This low participation is unsurprising given that older adults often face barriers to digital financial services, including digital illiteracy, resistance to technology adoption, and mobility issues that hinder engagement with agent banking outlets. This reflects national patterns where older populations are disproportionately excluded from formal financial systems, particularly those reliant on digital interfaces (Iwedi, 2024). The gender composition across all age brackets shows that male respondents outnumber female respondents, especially in the 30–39 and 40–49-year groups. However, it is important to highlight that in the key 30–39 age category, female financial inclusion is relatively strong (80.95%), suggesting that once access barriers are addressed particularly among younger women female participation can be high. This underscores the role of mobile and agency banking in promoting gender inclusivity, albeit with the persistent need to address systemic socio-cultural and economic constraints facing women. In summary, the demographic breakdown supports the thesis that mobile money and agency banking are significantly contributing to financial inclusion among the economically active youth and middle-aged populations in Rivers State. However, the distribution also reveals age and gender disparities that need targeted interventions. Efforts to deepen financial inclusion should focus on increasing access and digital literacy among the under-30 and over-50 demographics and reducing the gender gap by empowering more women through financial education, mobile phone access, and agent banking services tailored to their contexts. These findings echo the calls by Ozili (2023) for more inclusive and data-driven financial strategies to bridge existing demographic and spatial gaps in Nigeria's financial landscape.

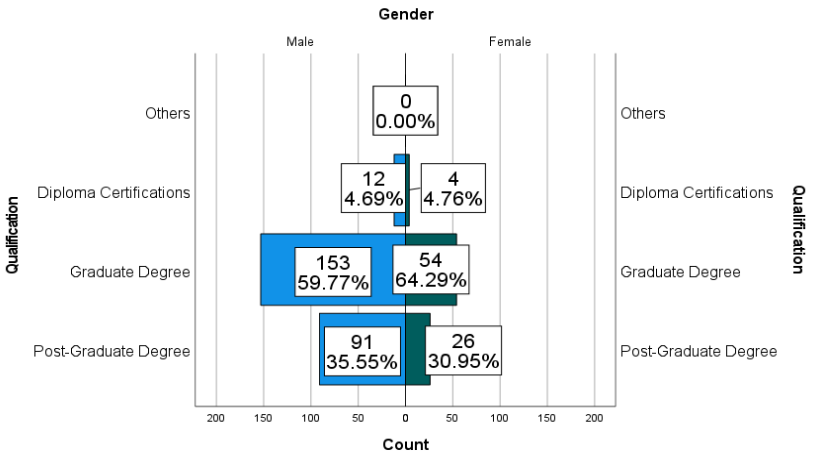

Fig-2: Pyramid for Gender and Age Distributions for the sample

Figure 2 illustrates the educational qualification distribution of respondents, disaggregated by gender, as part of the study on the Effects of Mobile Money and Agency Banking on Financial Inclusion in Rivers State, Nigeria. This demographic visualization is essential for understanding how levels of formal education may influence access to, and usage of, mobile and agency banking services in the state. From the data, individuals with a graduate degree represent the largest segment of respondents, with 153 males (59.77%) and 54 females (64.29%). This dominance highlights a clear trend: mobile money and agency banking platforms are most frequently utilized or accessible among university

graduates. This is likely due to higher digital literacy, greater financial awareness, and a stronger inclination to engage with formal financial tools within this educational group. These users typically reside in urban and peri-urban locations where mobile and agency banking infrastructure is more developed and financial service agents are more accessible.

The post-graduate degree category follows closely, with 91 males (35.55%) and 26 females (30.95%). The relatively high engagement among post-graduates suggests that advanced education significantly correlates with the adoption of financial innovations. These users likely have better income levels, more sophisticated financial needs (e.g., investment, savings products), and greater confidence in using technology for financial transactions. The concentration of post-graduate users further implies that mobile and agency banking services in Rivers State are currently skewed toward more educated demographics, which may inadvertently reinforce financial exclusion among less-educated populations. Respondents with diploma certifications account for a much smaller portion: 12 males (4.69%) and 4 females (4.76%). This suggests that individuals with sub-degree qualifications are less involved in mobile money or agent banking ecosystems. Possible reasons include lower income, less exposure to formal banking processes, or limited digital skills. Although this group forms a minority in this sample, they often represent a considerable portion of the informal sector workforce in real-world settings, especially in rural and semi-urban communities.

The category labeled "Others" records zero respondents, indicating either non-response or negligible representation of individuals with non-formal or vocational education qualifications. This absence is noteworthy because it points to an underexplored population that could potentially benefit from tailored financial inclusion interventions but are either not being reached or are not engaging with mobile and agency banking services. The overall gender composition reveals that male respondents significantly outnumber females across all qualification levels, though the female percentage among graduate degree holders (64.29%) slightly exceeds that of males proportionally. This suggests that once women attain higher education, their engagement with financial services through mobile and agency platforms increases considerably. However, female representation diminishes at the post-graduate level, possibly due to broader socio-economic and cultural barriers that limit women's access to advanced education and, by extension, digital financial tools.

This education-based breakdown of financial service users provides key insights into the current trajectory of mobile and agency banking adoption in Rivers State. It affirms that educational attainment is a strong determinant of financial inclusion through digital channels. Yet, it also reveals a structural gap: individuals with lower or no formal education are vastly underrepresented, reinforcing concerns that digital financial inclusion, while growing, may remain elitist without deliberate policy action. To expand the benefits of mobile and agency banking equitably across Rivers State, stakeholders must invest in financial literacy campaigns, particularly targeting those with basic or no formal education. Agent banking models should be adapted to accommodate less-educated users through simplified interfaces, vernacular language support, and trust-building community outreach. Only by addressing the educational divide can mobile financial services fulfill their full potential in bridging economic inequality and driving inclusive growth across all segments of the population. These findings align with EFInA and Central Bank of Nigeria (CBN) strategies, which emphasize inclusive access and recognize education as a major enabler of financial service utilization. They also echo the findings of the World Bank, which underscores the importance of integrating financial literacy with digital expansion to ensure inclusive and sustained financial development.

B. Descriptive Statistics Results

Table 1: Summary Univariate Distribution for the Variables

		Mobile Money	Agency Banking	Financial Inclusion
N	Valid	340	340	340
	Missing	0	0	0
Mean		3.0407	3.1277	3.2015
Std. Deviation		1.24051	1.20957	1.35647

Skewness	-.020	-.046	.025
Std. Error of Skewness	.132	.132	.132
Kurtosis	-1.985	-1.951	-1.947
Std. Error of Kurtosis	.264	.264	.264

Source: Survey Data (2025)

Table 1 presents the univariate descriptive statistics for the key variables under investigation: Mobile Money, Agency Banking, and Financial Inclusion, based on data collected from 340 valid respondents, with no missing values. This table provides a preliminary statistical understanding of how respondents perceive or experience each variable on the scale used in the survey, likely a Likert-type scale ranging from low to high agreement or satisfaction. The mean scores for all three variables are above 3.0, indicating moderately high perceptions or usage levels. Specifically, Financial Inclusion has the highest mean of 3.2015, suggesting that respondents generally agree that financial inclusion is improving or accessible, likely influenced by growing exposure to financial services. Agency Banking follows closely with a mean of 3.1277, while Mobile Money has a slightly lower mean of 3.0407. This suggests that, among the two delivery mechanisms, agency banking might be playing a marginally more prominent role in driving financial inclusion in Rivers State. This may be due to the physical presence of agents, which builds user trust in communities where digital-only solutions face resistance due to digital illiteracy or lack of access to smartphones.

The standard deviations for all three variables 1.24051 for Mobile Money, 1.20957 for Agency Banking, and 1.35647 for Financial Inclusion indicate moderate variability in respondents' experiences or perceptions. The highest variation is observed in Financial Inclusion, implying that while the average perception is positive, individual experiences vary significantly, possibly due to differences in location (urban vs. rural), income, education, or gender. The skewness values for all variables are near zero: -0.020 for Mobile Money, -0.046 for Agency Banking, and 0.025 for Financial Inclusion. These values suggest that the distributions are approximately symmetric, indicating that responses are fairly balanced on both sides of the mean. There is no significant skewness in either direction, which implies that there are no major clusters of extreme responses and the population's experience with these financial tools is relatively evenly spread.

Kurtosis values for all three variables are negative: -1.985 for Mobile Money, -1.951 for Agency Banking, and -1.947 for Financial Inclusion. Negative kurtosis, or platykurtic distributions, implies flatter distributions with lighter tails compared to the normal distribution. This suggests that extreme values are less frequent than in a normal distribution, indicating relatively homogeneous experiences among respondents. It also suggests that while usage or perception levels are moderate, there are fewer strong negative or positive outliers in the responses. The standard errors of skewness (0.132) and kurtosis (0.264) are consistent across all variables and indicate the precision of these estimates. Given that the skewness values are smaller than twice the standard error, there is no statistically significant departure from symmetry. Similarly, although the kurtosis values are slightly more negative than might be expected by chance, they are within acceptable bounds for assuming near-normality in moderately large samples. Overall, the univariate statistics support the interpretation that both mobile money and agency banking are moderately well-perceived as drivers of financial inclusion in Rivers State. However, the slightly higher rating and lower dispersion for agency banking could imply stronger trust or ease of use, especially in physical, cash-based transactions in rural and peri-urban areas. The descriptive results reinforce the central hypothesis of the study: that both channels contribute positively to financial inclusion, though their impact may vary depending on demographic and regional factors. These findings are in line with national trends reported by EFInA, which show growing adoption of agent banking and digital financial services, especially among younger and more educated Nigerians. Yet, they also suggest that significant efforts are still required to reduce variability in access and deepen inclusion among underserved populations, particularly through targeted financial literacy, infrastructure investment, and gender-sensitive strategies.

C. Correlation Results

Table 2: Relationship between Mobile Money, Agency Banking and Financial Inclusion

		Mobile Money	Agency Banking	Financial Inclusion
Mobile Banking	Pearson Correlation	1	.992**	.991**
	Sig. (2-tailed)		.000	.000
	N	340	340	340
Agency Banking	Pearson Correlation	.992**	1	.985**
	Sig. (2-tailed)	.000		.000
	N	340	340	340
Financial Inclusion	Pearson Correlation	.991**	.985**	1
	Sig. (2-tailed)	.000	.000	
	N	340	340	340

Source: Survey Data (2025)

Table 2 displays the Pearson correlation coefficients that assess the strength and direction of the linear relationship between Mobile Money, Agency Banking, and Financial Inclusion, based on the responses of 340 participants in Rivers State. The findings indicate very strong and statistically significant positive correlations among the three variables, providing strong evidence of a strong relationship between digital banking innovations and financial inclusion in the study area. The correlation between Mobile Money and Agency Banking is r = 0.992, significant at the 0.01 level (2-tailed). This highly significant coefficient indicates that respondents who are Mobile Money users are also highly likely to use Agency Banking services. This may indicate a highly interconnected ecosystem where respondents use multiple financial services dependent on advances in technology, proximity to agents, and transaction needs. For example, respondents may check balances or transfer money via a mobile app, while using a local agent for withdrawals, deposits, or for help with using digital interfaces. The very large strength of the association indicates that these two channels are complementary, rather than antagonistic, within the scope of the larger financial inclusion framework.

Correlation between Mobile Money and Financial Inclusion is again extremely high ($r = 0.991$, $p < 0.01$), thus indicating that the use of mobile money is highly effective in improving outcomes related to Financial Inclusion. It indicates that as people increasingly use mobile money, their overall inclusion in the formal finance sector improves. It is in line with the country-level statistics from EFInA (2023), which indicate that the increased use of mobile phone and mobile money-related services directly impacted the overall improvement in Financial Inclusion in Nigeria, from 68% in 2020 to 74% in 2023. The correlation between Agency Banking and Financial Inclusion is again r = 0.985, which is significant at p = 0.01. It again indicates that there is a very strong positive correlation between the increased use of Agency Banking and Financial Inclusion, meaning that as people increasingly use agency banking, their overall inclusion in finance improves. The agency banking association again confirms that agent networks play an important role in expanding outreach to the unbanked, particularly in areas where there are few branches of the formal banking sector. Even in many parts of Rivers State, particularly outside the urban areas of Port Harcourt, agency banking is seen as the first entry point to finance. It helps people open new accounts, conduct transactions, and access a whole range of finance products using agents whom customers trust, so as to reduce barriers, both physical and psychological, to finance. Across every indicator, the correlations are both strong and significant, suggesting that the tools we used actually capture what they claim to measure. That, in turn, backs up the core argument: mobile-money wallets and agency-banking outlets are two of the strongest levers for pulling more Rivers State residents into the formal financial system. Yet the same numbers raise a caution flag. Nearly every coefficient sits above 0.98, hinting that if we drop these variables into the same regression, they could overlap so tightly that multicollinearity creeps in.

Before any further modeling we should therefore run VIF checks or, if needed, fold the indicators into a smaller set of factors through dimension-reduction techniques. Still, the take-away is clear. Mobile money and agency banking not only stand on their own as pillars of inclusion; they also move in tandem, reinforcing one another in the eyes of users. This finding gives policymakers, banks, and regulators (the Central Bank of Nigeria included) solid ground for treating the two channels as a single, mutually reinforcing system. Rolling them out together especially in rural towns and peri-urban hubs could widen coverage, shrink the ranks of the excluded, and knit a sturdier digital-finance mesh across Rivers State.

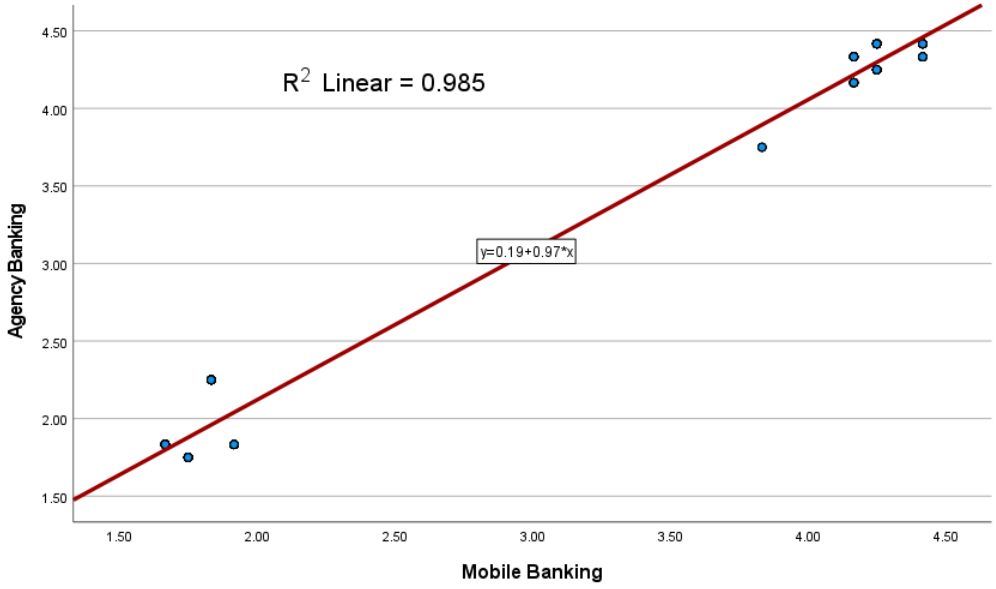

Fig-3: Scatter diagram for the relationship between mobile money and agency banking

The scatter diagram showing the linear relationship between Mobile Banking and Agency Banking indicates a high R-squared measure of 0.985, indicating that the variability in the use of agency banking by 98.5% can be explained by the use of mobile banking. The closeness of the data points to the linear relationship confirms the high Pearson correlation coefficient of 0.992, indicating that the increasing use of mobile banking contributes to the increasing use of agency banking. The high degree of linkage between the two aspects suggests a high degree of mutual dependence in improving financial inclusion in Rivers State.

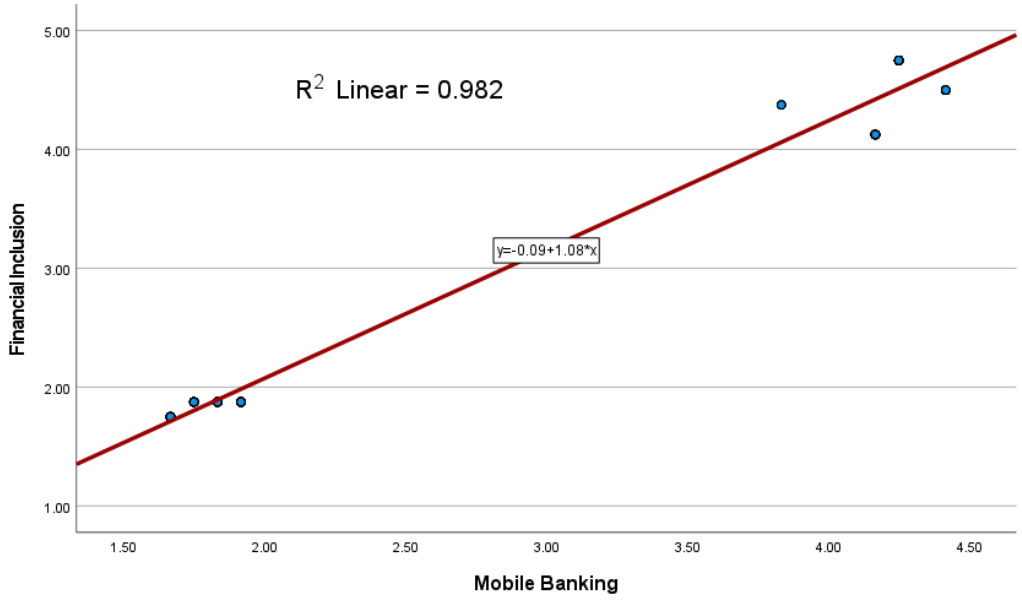

Fig-4: Scatter diagram for the relationship between mobile money and financial inclusion

Figure 4 below is a scatter plot indicating the relationship between mobile banking and financial inclusion. The linear trend line specified by the equation y = 0.09 + 1.08x generated from the scatter plot reveals that the variables are strongly and directly related. The value of the coefficient of determination, with an R^2 value of 0.982, indicates that there is a direct and significant relationship between the variables, as the variables determine exactly 98.2% of the changes that organize the value of the other variable. The value of the slope (+1.08) indicates that the variables increase proportionally as the value of one variable goes up by 1.08 units when the other variable goes up by one unit.

5. Conclusion

The results from this research establish strong empirical data that illustrate how mobile money and agency banking play a crucial role in achieving financial inclusion in Rivers State, Nigeria. The descriptive statistics display fairly high usage levels for mobile money (mean = 3.04) and agency banking (mean = 3.13), with financial inclusion being rated slightly higher (mean = 3.20), indicating a positive view and level of engagement. The demographic statistics show that financial inclusion is high for people between 30–39 years old and also those with a graduate or post-graduate degree, showing the impact of age and education in digital financial adoption. The lower representation of people younger than 30, those over 50 and those with a diploma or no qualifications, however, indicates a gap in generational and educational lines. The correlation statistics also support the hypothesis of the study, showing very strong, statistically significant positive relationships between mobile money, agency banking, and financial inclusion, with all correlation coefficients greater than 0.98 and significant at the 1% level, suggesting a high level of complementarity between mobile and agency banking in financial inclusion. This is supported by the graph of linear regression (R^2 = 0.985), which clearly indicates that a higher usage of mobile banking predicts agency banking significantly and vice versa. This dependency indicates that these two channels of delivering financial services constitute an integrated system which is responsible for disseminating financial services to underserved segments. Collectively, these findings confirm and validate that mobile money and agency banking services not only operate side by side but also complement each other, in terms of expanding the financial frontier, especially in environments where conventional banks lack fully.

On the contrary, the imbalanced demographic distributions also succeed in indicating the existence of financial segregation in financial inclusion accessibility in the state of Rivers, along age, gender, and educational lines. The high variability also suggests imbalanced accessibility, which calls for specific interventions. Some recommendations derived from the study's findings include: First, policies and regulatory systems must focus on the expansion of agent networks and mobile network infrastructure into rural areas. This will be through encouragement of financial institutions as well as mobile network providers to offer services in low-density areas as well as streamlining the registration system for rural residents. Second, financial and digital literacy programs must be ramped up, particularly intended for women, senior citizens, and those with low levels of formal education. This will be conducted at the community levels with instructions given in local parlance as well as leveraging cooperative or trade associations as a means of instilling trust. Third, there must be a harmonization of efforts between mobile banking and agent banking systems via a mechanism of interoperability with a view to enabling customers easily switch between agents using mobile banking services. This will boost trust as well as cut costs of transacting while improving user experience particularly for low-income clients. Fourth, there must be a focus on the development of financial product offerings by financial service providers to meet informal businesses. These include savings facilities for micro enterprises, credit facilities with flexible repayment terms as well as insurance packages aimed at irregular income generators. This will be accessed easily via mobile platforms or agent networks. Finally, there must be a focus on a data-informed strategy for financial inclusion purposes. This will be particularly based on empirical information derived from the EFInA Access to Finance Survey. Given the current financial inclusion of 74% with 26% excluded from financial services, there is a clear need for such specificity as a means of meeting as well as surpassing the 2024 financial inclusion strategy of 25% exclusions.

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