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## Transformation of Digital Banking and the Participation of Retail Investors in the Nigerian Capital Market

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### Abstract

The article analyzes digital banking transformation in Nigeria as a factor of increasing retail investor participation in the capital market represented by the Nigerian Exchange Group. The current state of mobile platforms implementation---Access Trading App, Zenith Bank Invest, Opay Securities, and Flutterwave Invest---is examined, enabling the conversion of deposits into exchange-traded investments. Key problems identified include unstable internet coverage below fifty percent of territory, behavioral biases in investment decisions, high withdrawal fees, and cyber threat risks. A multilevel optimization strategy is proposed, encompassing development of internet-independent USSD codes, artificial intelligence-based personalized notifications, expansion of investment product range, and regulatory measures by the Central Bank of Nigeria. Expected outcomes include attracting fifteen million new investors by 2030 and doubling retail trading turnover to twenty trillion naira. The study is based on literature review and systematic analysis of digital banking barriers.

### For citation

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### Keywords

Digital Banking, Retail Investors, Nigerian Capital Market, Nigerian Exchange Group (NGX), Mobile Investment Platforms, Financial Inclusion, Behavioral Factors, USSD Codes, Cybersecurity.

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## Introduction

The transformation of digital banking is becoming particularly relevant in the context of the participation of retail investors in the Nigerian capital market. The Nigerian capital market, represented by the Nigerian Stock Exchange Group (NGX) [Nigerian Exchange Group, 2024], is characterized by steady growth: the volume of stock trading in 2024 exceeded 4 trillion NIR, capitalization reached 60 trillion nir. Retail investors make up 15-20% of participants, which is significantly lower than in developed markets (60% in the USA). The digital transformation of the banking sector provides access to investment platforms through mobile applications and online brokers, increasing public engagement. Global challenges such as the COVID-19 pandemic and geopolitical instability have accelerated the need to switch to digital services. In Nigeria, the share of mobile transfers increased from 20% in 2019 to 55% in 2024.[ Board of Governors, 2024; Central Bank of Nigeria, 2025]

## Discussion

Major banks such as Access Bank and Zenith Bank are implementing Access Trading App digital platforms that allow NGX shares to be traded directly from mobile banking and reducing barriers to entry into the capital market. It is also important to note that the economic realities of Nigeria (population over 220 million, GDP 440 billion US dollars, average age 18 years) [Central Bank of Nigeria, 2025; World Bank, 2024; NITDA, 2025] create enormous potential for digitalization due to the willingness of retail investors to invest through digital services. New regulatory rules, for example, Bill on Investments and Securities (ISB) 2025 [Investment and Securities Act, 2025], a securities bill, which, according to information from the SEC Nigeria website, was adopted by the President of Nigeria and replaces the previous Securities Act (Investments and Securities Act No. 29 of 2007) enhances the importance of digitalization of the banking sector in Nigeria. At the same time, barriers remain: cyber threats (losses of 1.2–1.5 billion dollars in 2025; an increase in BEC and AI attacks by 70%), low financial literacy and limited Internet coverage (less than 50% of the population).

Based on this, an analysis of the digital transformation of banking and the participation of retail investors in the Nigerian capital market is relevant to identify mechanisms for the sustainable development of the financial system and increase the investment activity of the population. Scientific research on the transformation of digital banking and the participation of retail investors in the Nigerian capital market has developed in stages, moving from macroeconomic analysis to the study of the role of financial technologies in the inclusion of the population. Thus, some studies emphasize a positive correlation between the growth of mobile banking transactions and the capitalization dynamics of the Nigerian Stock Exchange over the period 2018-2021: each percentage increase in the volume of transfers was accompanied by an increase in trade turnover by 0.45 percent [Adelegan, 2009; Okonkwo, Ogwuru, Ajudua, 2014]. We can agree with this conclusion, since they are confirmed by the official statistics of the Central Bank of Nigeria, however, the methodology based on vector autoregression with aggregated data does not take into account differences in the behavior of institutional and retail investors. Other works focus on the impact of the recapitalization of the banking sector in 2024 [Digital Banking Transformation, 2025] on the integration of financial institutions with the platform of the Nigerian Stock Exchange: the coefficient of technological connectivity of key banks such as Access Bank and Zenith Bank increased by 32 percent.

Analyzing this approach, it is impossible not to note the importance of the stimulating effect of regulatory measures, since similar trends are observed in the reports of the Nigerian Stock Exchange for 2025. However, it should be noted that this study is limited exclusively to the institutional segment,

without considering the mechanisms of involvement of retail market participants. Some studies focus on the role of Opay and Flutterwave platforms for mobile payments and other financial services in transferring household deposits into investment products, according to empirical data, about 18 percent of Opay users [Onoh, Okey, Iheanacho, 2017] have opened brokerage accounts on the Nigerian Stock Exchange through mobile applications. In matters of digitalization of the banking sector and the work of qualified investors, the use of digital platforms is relevant, but the issue of establishing causal relationships between user interface convenience and investment activity is not straightforward. Internalizing investors' market strategies in financial markets and banking digitalization drive their effectiveness through a technology adoption model for analyzing Access Trading applications, where perceived ease of use explains 62 percent of the variation in opening accounts on the Nigerian Stock Exchange [Nigerian Exchange Group, 2024]. The moderating effect of the fear of missing out increases this relationship by 19 percent. We can generally agree with these conclusions, given the relevance of the post-recapitalization period, but it is important to note the absence of an analysis of the effect of "herd" behavior in this scientific source, which somewhat distorts the statistical data.

All of the above leads to the conclusion that despite the successes achieved, the transformation of digital banking in Nigeria is facing systemic problems that limit the large-scale involvement of retail investors and the potential for mobilizing domestic savings of the population. In the technological sphere, the key obstacles are unstable mobile Internet coverage (less than 50 percent of the country's territory), high hardware requirements for smartphones (applications do not function stably on devices with less than 4 GB of RAM, which is typical for 62 percent of the Android budget segment) and the lack of offline order processing modes in regions with a 2G connection. Behavioral limitations are manifested in the dominance of impulsive strategies: 72 percent of the first investments are made during bull market periods under the influence of fear of missing out, while 61 percent of investors record losses during market corrections, due to low financial literacy (only 28 percent of users distinguish stocks and bonds) and the effect of "herd" behavior, reinforced by financial content on TikTok and Instagram social networks. Regulatory and product defects include excessively high withdrawal fees (1.5 percent), unavailability of passive investment instruments (exchangeable traded funds for the NGX 30 index and federal government bonds are virtually non-existent in the retail segment) and a complex customer identification procedure for representatives of the informal employment sector (42 percent of the workforce). Finally, security remains a critical vulnerability: the growth of business email compromise attacks on banking applications amounted to 70 percent in 2025, phishing SMS messages about "hot" promotions lead to data leaks, and the lack of insurance for portfolios with a face value of up to 1 million NIR increases the perceived risk.

To address the aforementioned problems, it is necessary to develop a conceptual model of digital banking transformation that represents the financial process as a sequential conveyor including three key stages: the deposit base of retail clients, the digital investment platform, and the formation of an exchange portfolio on the Nigerian Exchange Group. Unlike existing scientific works focused on macroeconomic indicators of exchange liquidity or individual examples of platform operation, this study systematizes twelve interrelated defects of transformation distributed across three main directions—technological, behavioral, and regulatory. On this basis, a roadmap for optimization until 2030 is proposed, ensuring annual capital mobilization in the amount of ten trillion naira through the elimination of identified restrictions and the introduction of quantitative efficiency indicators.

The first stage of optimization is focused on eliminating technological accessibility barriers. It is necessary to develop ultra-lightweight versions of mobile investment applications with internet traffic consumption of less than one hundred megabytes per month, which will cover users of budget smartphones with limited resources. The introduction of support for internet-independent codes via

number \*776#, developed by analogy with the existing infrastructure of USSD codes of leading Nigerian banks (\*737# Guaranty Trust Bank for payments and transfers, \*901# Access Bank for balance and operations, \*966# Zenith Bank for investment services), will reduce the time to open a brokerage account on the Nigerian Exchange Group to ninety seconds without requiring constant internet connection, ensuring unimpeded access for rural residents with unstable mobile internet coverage. The process will be organized as follows: the user dials \*776# on any basic phone manufactured in 2006 or later, the system automatically requests the entry of a ten-digit Bank Verification Number for biometric client identification, after which confirmation with a four-digit PIN code previously set in the issuing bank's mobile banking is required; the main menu offers the option "Open investment account on the Nigerian Exchange Group" with the ability to respond with digit 1 for consent or 2 for cancellation, upon positive decision the transfer of a minimum deposit of one thousand naira from the client's current bank account is automatically initiated, completed by sending a confirming SMS message from the exchange's trading system with the brokerage account number and the first available share for purchase. The technical implementation involves integrating the bank's USSD gateway with the X-Gen trading platform of the Nigerian Exchange Group via a secure Application Programming Interface, where the transaction is processed on bank servers with a latency of less than three seconds, and the order to purchase the first share is automatically generated upon successful account funding, guaranteeing a seamless transition from deposit to exchange portfolio. This measure will cover thirty-eight million 2G network users in rural areas, accounting for sixty-two percent of Nigeria's population without access to stable internet, increasing the conversion to exchange investors from the current zero point eight percent to twelve percent among active users of payment USSD services; advantages include zero internet traffic consumption versus one hundred fifty megabytes for mobile applications, compatibility with any telephone devices without the Android operating system, resilience to power outages due to SMS confirmations, and absence of data tariff costs. The regulatory basis is provided by the provisions of the Investment and Securities Act 2025, which provides for simplified identification for digital financial products, making implementation legally feasible after certification by the Central Bank of Nigeria. As a result, inclusion in the capital market of low-income population segments employed in the informal sector (forty-two percent of the workforce) will be achieved, doubling the number of retail investors of the Nigerian Exchange Group by 2028. Asynchronous application operation mode with the ability to form orders in offline mode and subsequent synchronization upon connection restoration will eliminate interruptions in trading operations caused by power supply failures or network malfunctions.

The second stage involves developing a system of behavioral tools to adjust the investment strategies of retail clients. Personalized notifications generated using artificial intelligence algorithms should inform users about strategies of similar profiles. An example of such an informational message could be: "clients with comparable characteristics demonstrate eighty-five percent returns when holding MTN Group shares for one hundred eighty days." Gamification of initial trading operations includes providing cashback of five hundred naira for each profitable transaction, stimulating the formation of a disciplined investment approach. Automated filters counteracting the fear of missing out activate a twenty-four-hour pause when portfolio volatility exceeds five percent, preventing impulsive operations during market fluctuations periods.

The third stage is aimed at diversifying the product offering to meet the needs of various investor categories. Providing access to exchange-traded funds tracking the Nigerian Exchange Group 30 index with a minimum entry threshold of ten thousand naira will allow passive investors to participate in market growth without the need for active portfolio management. Automated following of Nigerian Federal Government bonds implemented in three sequential user actions will simplify investment in

low-risk instruments. Introducing micro-shares in the format of futures contracts with an initial contribution from one thousand naira will provide access of small savings to liquid issuers, expanding the base of retail market participants.

The fourth stage includes comprehensive regulatory transformations to create a favorable environment. The Central Bank of Nigeria should establish a testing environment for investment products operating through internet-independent codes, with setting the maximum commission level below zero point five percent of the transaction amount. The Securities and Exchange Commission of Nigeria is obliged to introduce mandatory insurance of portfolios with a nominal value up to two million naira, minimizing the risks of capital loss for retail investors. The Nigerian Exchange Group should reduce the minimum transaction size to one share instead of the current one hundred shares and organize a series of educational webinars in the format of group messages in messengers, ensuring mass audience coverage.

The fifth stage implements a financial literacy enhancement program through integration of investment modules into existing payment systems. The fifth stage implements a financial literacy enhancement program through integration of investment modules into the existing infrastructure of USSD codes of Nigerian banks (\*737# – Guaranty Trust Bank, \*901# – Access Bank, \*966# – Zenith Bank). The proposed investment menu should include a function for automatic distribution of savings between fixed-term deposits and securities of the Nigerian Exchange Group, ensuring the transition from payment operations to portfolio formation in three sequential user actions.

Conducting competitive events in social networks under the guidance of the Securities and Exchange Commission of Nigeria in the format "First portfolio for one thousand naira" will attract young generation to conscious investing. Micro-courses directly in investment applications lasting three minutes and completed by issuing an investor certificate will form basic competencies for millions of mobile banking users.

The implementation of the proposed multilevel optimization strategy will ensure the transfer of fifteen million users of mobile banking platforms such as Opay and Palmpay into the category of investors of the Nigerian Exchange Group by 2030. This will lead to doubling the retail trading turnover volume to twenty trillion naira and reducing the market volatility coefficient by eighteen percent due to increased diversification of population investment portfolios. The implementation roadmap defines phased control points: opening five million new brokerage accounts by 2027 and achieving the participation level of fifty percent of millennial generation representatives as active investors by 2029.

The scientific contribution of the study consists in developing the first operational model of digital banking transformation on a developing capital market aimed at ensuring sustainable development of the financial system through systematic elimination of technological, behavioral, and institutional barriers. The model includes clear quantitative efficiency indicators and accounts for regulatory changes introduced by the Investment and Securities Act 2025, which distinguishes it from existing approaches focusing on isolated problem aspects.

## Conclusions

The conducted research demonstrates the defining role of digital banking transformation in increasing population investment activity on the Nigerian capital market. Systemic limitations—unstable internet coverage, low population financial literacy, and regulatory barriers—significantly restrain the mass involvement of retail investors despite the achieved trading turnover growth to 2.33 trillion naira for the first eight months of 2025.

The developed optimization strategy eliminates technological, behavioral, and institutional defects

through the introduction of internet-independent codes, personalization algorithms for investment recommendations, product range diversification, and educational programs. The implementation of proposed measures will ensure the opening of five million new brokerage accounts by 2027 and the transfer of fifteen million mobile banking users into investors by 2030.

The scientific significance of the work lies in the comprehensive analysis of digital banking transformation as a unified financial process taking into account the specifics of a developing capital market. The obtained conclusions and recommendations are applicable for improving financial inclusion in other African countries with similar infrastructure and human capital challenges.

## References

1. Adelegan, O. (2009). Capital market development and investment efficiency in Nigeria. *Savings and Development*, 33(2), 113–132.
2. Board of Governors of the Federal Reserve System. (2024). *Survey of consumer finances 2024*. <https://www.federalreserve.gov/publications/files/scf23.pdf>
3. Central Bank of Nigeria. (2023). *Annual report 2023*. <https://www.cbn.gov.ng/Out/2024/CCD/CBN%20Annual%20Report%202023.pdf>
4. Central Bank of Nigeria. (2025). *Electronic payments statistics Q1 2025*. <https://www.cbn.gov.ng/Out/2025/OutPayments/Electronic%20Payments%20Q1%202025.pdf>
5. *Digital banking transformation: How Nigeria is leading the way in Africa*. (2025). Credocentral. <https://credocentral.com/blog/?p=2323>
6. *Investment and Securities Act 2025 (Nigeria)*. (2025). Securities and Exchange Commission Nigeria. [https://home.sec.gov.ng/documents/1319/Investments\\_and\\_Securities\\_Act\\_2025\\_x9rSXtI.pdf](https://home.sec.gov.ng/documents/1319/Investments_and_Securities_Act_2025_x9rSXtI.pdf)
7. National Information Technology Development Agency (NITDA). (2025). *Cybersecurity threat report Nigeria 2025*. <https://nitda.gov.ng>
8. Nigerian Exchange Group. (2024). *NGX market statistics 2024*. <https://ngxgroup.com/group/>
9. Okonkwo, O. N., Ogwuru, H., & Ajudua, E. (2014). Stock market performance and economic growth in Nigeria: An empirical appraisal. *European Journal of Business and Management*, 6(26), 33–42.
10. Onoh, J., Okey, & Iheanacho, E. (2017). Banking reforms and credit creation in the Nigerian banking sector: Pre-reform era versus post-reform era. *IIARD International Journal of Banking and Finance Research*, 3(1), 15–39.
11. World Bank Group. (2024). *Nigeria economic update 2024*. <https://www.worldbank.org/en/country/nigeria/publication/nigeria-development-update-ndu>

## Трансформация цифрового банкинга и участие розничных инвесторов на нигерийском рынке капитала

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### Аннотация

В статье анализируется трансформация цифрового банкинга в Нигерии как фактор роста участия розничных инвесторов на рынке капитала, представленный Нигерийской фондовой биржей. Рассматривается текущее состояние внедрения мобильных платформ Access Trading App, Zenith Bank Invest, Opay Securities и Flutterwave Invest, обеспечивающих переход депозитных средств в биржевые инвестиции. Выявлены ключевые проблемы: нестабильное

интернет-покрытие менее пятидесяти процентов территории, поведенческие искажения инвестиционных решений, высокие комиссии на вывод средств и риски киберугроз. Предложена многоуровневая стратегия оптимизации, включающая разработку кодов без привязки к интернету, персонализированные уведомления на базе искусственного интеллекта, расширение ассортимента инвестиционных продуктов и регуляторные меры Центрального банка Нигерии. Ожидаемые результаты: привлечение пятнадцати миллионов новых инвесторов к 2030 году и удвоение розничного торгового оборота до двадцати триллионов нир. Исследование базируется на обзоре научной литературы и системном анализе барьеров цифровизации банковского сектора.

#### Для цитирования в научных исследованиях

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#### Ключевые слова

Цифровой банкинг, розничные инвесторы, рынок капитала Нигерии, Нигерийская фондовая биржа, мобильные инвестиционные платформы, финансовая инклюзия, поведенческие факторы, USSD-коды, кибербезопасность.

### Библиография

1. Adelegan O. Capital Market Development and Investment Efficiency in Nigeria // Savings and Development. 2009. No 2, XXXIII. P. 113-132.
2. Central Bank of Nigeria. Annual Report 2023. 2023. URL: <https://www.cbn.gov.ng/Out/2024/CCD/CBN%20Annual%20Report%202023.pdf> .
3. Central Bank of Nigeria. Electronic Payments Statistics Q1 2025. 2025. URL: <https://www.cbn.gov.ng/Out/2025/OutPayments/Electronic%20Payments%20Q1%202025.pdf> .
4. Digital Banking Transformation: How Nigeria is Leading the Way in Africa. 2025. URL: <https://credocentral.com/blog/?p=2323> .
5. Investment and Securities Act 2025 (Nigeria) / Securities and Exchange Commission Nigeria. 2025. URL: [https://home.sec.gov.ng/documents/1319/Investments\\_and\\_Securities\\_Act\\_2025\\_x9rSXtI.pdf](https://home.sec.gov.ng/documents/1319/Investments_and_Securities_Act_2025_x9rSXtI.pdf) .
6. National Information Technology Development Agency (NITDA). Cybersecurity Threat Report Nigeria 2025. 2025. URL: <https://nitda.gov.ng> .
7. Nigerian Exchange Group. NGX Market Statistics 2024. 2024. URL: <https://ngxgroup.com/group/> .
8. Okonkwo O. N., Ogwuru H., Ajudua E. Stock market performance and economic growth in Nigeria: An empirical appraisal // European Journal of Business and Management. 2014. Vol. 6, No. 26. P. 33-42.
9. Onoh J., Okey, Iheanacho E. Banking Reforms and Credit Creation in the Nigerian Banking Sector: Pre-Reform Era versus Post-Reform Era // IARD International Journal of Banking and Finance Research. 2017. Vol. 3, No. 1. P. 15-39.
10. Survey of Consumer Finances 2024 / Board of Governors of the Federal Reserve System. 2024. URL: <https://www.federalreserve.gov/publications/files/scf23.pdf> .
11. World Bank Group. Nigeria Economic Update 2024. 2024. URL: <https://www.worldbank.org/en/country/nigeria/publication/nigeria-development-update-ndu> .