E-ISSN: 1115 - 8530 P-ISSN: 3026-8958
MPRI-JFRBD | INTERNATIONAL JOURNAL OF FINANCIAL RES. AND BUSINESS DEVELOPMENT
VOL. 06 NO. 7 – OCTOBER, 2024

FACTORS INFLUENCING FINTECH EXPENDITURE IN SELECTED NIGERIAN DEPOSITS MONEY BANKS

OLADEJO M. O.; AKINTUNDE H. A.; AZEEZ J. A.; & OYELEYE K. W.

Department of Accounting, Ladoke Akintola University of Technology, Ogbomoso Oyo State

Corresponding Author: mooladejo@Lautech.edu.ng

DOI Unique ID: 10.70382/mejfrbd.v6i7.009

Abstract

In the last decades, financial markets and the economy have been experiencing an explosion of innovation and technologies modifying financial services and products, especially banking services. In the context of Nigeria's banking sector, previous studies centered around financial technology (FinTech) deployment whereas the current study focused on the critical issues surrounding the determinants of fintech expenditure and its consequential impact on the profitability listed deposit money banks (NDMBs). Primary and secondary data were used for the study. Primary data were collected through a well-structured questionnaire. Secondary data were extracted from abridge annual reports of selected NDMBs for the period 2008 to 2023. The population of the study according to the Nigerian Exchange Group (NGX) 2023 consists of 14 NDMBs out of which 9 were selected. Data collected were analyzed using descriptive, inferential statistics, Analysis of Variance (ANOVA) and panel regression analysis. Descriptive statistics of frequency and percentage were used to analyse the socio-economic characteristics of the respondents while inferential statistics such as ANOVA was used to evaluate factors influencing fintech expenditure in NDMBs. The results of descriptive analysis revealed the specific factors influencing fintech expenditure in NDMBs as extracted from the distributed copies of questionnaire. The factors include Cost of fintech infrastructure (COF) (75%), Cost of Software acquisition (COS) (65.38%), Maintenance cost (MC) (52.41%) and Bank size (BS) (78.51%). Based on the summary of findings of this study, it was concluded that the there is a significant difference in the factors influencing fintech expenditure in NDMBs. Therefore, the study recommends that NDMBs should carefully plan their fintech investments to balance the immediate costs with long-term benefits.

Keyword: Fintech Expenditure, Innovation, Technologies, Nigerian Deposits Money Banks

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

Introduction

In the last decades financial markets and economies have been experiencing an explosion of innovation and technologies having modified financial services and products, especially banking services. The financial technology (fintech), as observed by Song, *et al.,* (2021) has initially designated the computer technology applied to the back office of banks or trading firms, but now, it bases its business model on new efficient information technologies such as the blockchain, artificial intelligence (AI), big data, and the Internet of Things. The fintech can simplify the information transfer, improve the processing speed, reduce costs, and promote a continuous improvement in the transactional lending (Cenni *et al.,* 2015; Liberti & Peterson, 2019).

Verhoef, *et al*., (2021) observed that the growth of an e-commerce sector, emerging digital technologies, such as big data, Artificial Intelligence, cloud computing and robotics, has triggered the implementation of new technologies in organizations. Furthermore, Papagiannidis & Marikyan, (2020) argued that the application of the technologies in the workplace has redefined inter- and intra-organisational communication has streamlined business processes to ensure benefits, such as higher productivity, the wellbeing of employees and the satisfaction of consumers. To achieve such benefits, Marikyan and Papagiannidis, (2023) believed that some companies had made massive spending on technologies. In the same vein, Edo, Etu, Tenebe, Oladele, *et al*., (2023) observed that the novel coronavirus caused a lifestyle shift, and the acceptance of offsite financial transactions is still a case for financial technology (fintech). Mobile financial transactions continue to be at an all-time low, and financial institutions are develop ing approaches for financial digitalization acceptability (Edo, *et al*., 2023).

In another study, Naz, *et al.* (2022) investigated the growth of FinTech during the COVID-19 pandemic and concluded that digital platforms' innovation creates an unconventional economy, bridging the gap between technology and individuals involved in financial outreach, networking, and prosperity of the FinTech industry. Also Hassan and Misrina (2021) examine the impact of FinTech on the work-from-home and mobile banking operations of Islamic banking during the pandemic and found that the increased use of FinTech by Islamic financial institutions enhances work-from-home activities, forcing people to adopt different practices, including mobile banking, which has gained recent attention.

The factors influencing expenditure on innovations and technology could be different across countries and sectors. For instance, few studies have tried to identify the factors influencing the adoption of mobile banking in Bangladesh during the COVID-19 pandemic, based on published articles and secondary data (Khatun, et al. 2021; Shakila 2021). The adoption of FinTech technologies is mostly determined by contextual factors like social influence, risk, and trust (Al Nawayseh 2020; Ryu 2018; Senyo and Osabutey 2020; Stewart and Jürjens 2018; Xie, *et al.* 2021). To explain the curious geography of fintech adoption, Frost, (2020) surveyed evidence from different areas of financial services, sorting these into the key forces behind adoption and found unmet demand, the competitive environment, regulation, and changing demographics as influencing factors. Understanding these economic drivers helps not only to understand current developments (Frost, 2020) and require further investigation from the Nigerian deposits money

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

bank perspective. The study therefore examines the factors influencing fintech expenditure in Nigerian Deposits Money Banks

Literature review

Financial Technology (FinTech)

Research on the financial technology focuses attention on using the most reliable measure of the financial technology investment but most studies have measured the degree of digitization by the presence of IT (information technology) expenditures related to hardware assets and software reported on corporate balance sheets. Darolles (2016) defines financial technology or fintech as the application of different types of advanced technologies in the financial industry. Digitization refers to transforming the way companies interact with customers and conduct business through using new technologies. Indeed, digitization promotes the use of new technologies so as to generate new revenues and opportunities. In this context, a set of actions known as digital transformation must be applied by organizations to adopt new innovative models such as big data, artificial intelligence, and blockchain (Sadigh, *et al.*, 2021). Thus, the digitization or digital transformation is complex and costly, and it requires a focus on features and functionality. Therefore, digitization necessitates investments known as digital investments defined as technology projects, which need enabling expenditures to implement or use the new technology. On that account, it is essential that companies actively plan and monitor their digital investments so that they can achieve the goal of digital transformation and assess its return.

Barbu, *et al.* (2021) described FinTech as a collection of innovative services supported by the advancements in information systems and communication technology. Abad-Segura *et al*. (2020) describe the FinTech sector as comprising innovative firms that provide financial services, mainly relying on technology, and explain that FinTech emerged from the combination of the terms "finance" and "technology." Gai, *et al.* (2018) suggest that FinTech reflects the financial service sector's adaptation to technology. Zaghol, *et al*. (2021) add that FinTech involves the use of the internet and computerized advancements within the financial services sector. FinTech is expected to lead to new plans of action, outputs, applications, and cycles in the financial market. Additionally, FinTech involves computer programs and other technologies used to facilitate financial and banking services, leading to the introduction of various financial transactions, such as credit cards, fund transfers, ATM/debit cards, e-money, and other payment processors (Nurlaela, *et al*. 2020) FinTech services have expanded to different industries and fields, including e-commerce, risk management, virtual currencies, mobile payment, portfolio management, customized consulting, and system integration (Nicoletti 2017). The growth of the FinTech industry has been associated with the challenges customers faced in accessing traditional financial services during the 2008 financial crisis (Knight and Wójcik 2020).

Theoretical Framework

The construct of this study will embedded on UTAUT model based on expected fitness of the model for ICT usage establishing its influence on performance of listed deposits money banks Nigeria. The adoption of FinTech technologies is mostly determined by contextual factors like social influence, risk, and trust (Al Nawayseh 2020; Ryu 2018; Senyo and Osabutey 2020; Stewart

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

and Jürjens 2018; Xie et al. 2021). The original UTAUT model posited four major dimensions as determinants of usage intention and behavior: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh, *et al*. 2012). The UTAUT model in combination with the extended valence framework is deemed to be more ideal for fintech services to provide more insights into other contextual elements, such as risk and trust (Al Nawayseh 2020; Kim et al. 2008; Pal et al. 2019). Although the adaptations of the model enriched the understanding of the theory applications, the research was mainly limited to organisational settings (Chang et al., 2007; Yi et al., 2006; Gupta, Dasgupta & Gupta, 2008; Im, Hong & Kang, 2011; Al-Gahtani, Hubona & Wang, 2007). The literature lacked evidence about a fintech expenditure model, which could explain the utilisation of technology organizations and the impact on their profitability. However, such evidence was important, given arguments in prior studies suggesting that the determinants of acceptance of technology across organizations and countries are not the same. It will providence evidence on the importance of the factors reflecting that costs and benefits of behaviour varied based on the context (e.g. (Brown & Venkatesh, 2005; van der Heijden, 2004; Brown, Venkatesh & Bala, 2006; Brown & Venkatesh, 2005; Kim, Malhotra &Narasimhan, 2005)).

UTAUT has made several contributions to the literature. The model provides empirical insight into technology acceptance by comparing prominent technology acceptance theories, which often offer competing or partial perspectives on the subject. UTAUT demonstrates that proposed factors account for 70 percent of the variance in use intention (Venkatesh, *et al.*, 2003), offering stronger predictive power compared to the rest of the models that examine technology acceptance (e.g. (Davis, 1993; Sheppard, Hartwick & Warshaw, 1988)). The interactive effect of some constructs with personal and demographic factors demonstrates the complexity of the technology acceptance process, which is dependent on individuals' age, gender and experience (Venkatesh, *et al.,* 2003).

Empirical Review

Factors influencing investing in financial technology and its maintenance could provide an understanding of the expenditure and expected returns. One of the factors that determine the deployment of ICT is cost and sources of funding. Cost and funding for initial setup of ICT deployment can be very expensive. From the point of view of economist, IT changes both the relative cost of capital and the cost of information. For example, Oyebiyi, *et al.,* (2017) pointed out that SMEs in Manufacturing sector are being driven to adopt ICT because of the influence of customers and suppliers, in order to improve their customer service and keep up with competitors and enhance supplier relationships. Beers and Roland (2008) characterized ICT implementation driving forces into five categorized which include: Industry environment (IE), Government promotion (GP), Technology progress (TP), Market demand (MD), Industry strategy (IS).

Thahabia Tarsh and Somaya Harraq (2020) aimed to know the reality of financial technology in Arab countries and its importance in promoting financial inclusion .The study concluded that despite the development of the volume of investment in financial technology in the Arab countries, its role remained limited and weak in these countries with regard to reducing the financial inclusion gap due to a number of factors, including the absence of laws and regulations, weak capital, and a lack of digital financial culture, among others.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

Previous studies have established sufficient evidence of the values or benefits of ICT implementation in manufacturing firms. A number of these values are applicable to general practices, including the potential for ICT to facilitate a broad range of intra- and inter-enterprise business operations and transactions by enhancing productivity and work effectively, reducing transaction costs, promoting organizational and commercial reform, improving communication and collaboration processes, boosting knowledge transfer and management and enhance

Methodology

The study employed survey design using well-structured questionnaire. The population of the study will consist of fourteen (14) NDMBs registered and listed on the floor of the Nigerian Exchange Group (NXG) while the sample of ten (10) Nigerian Deposit Money Banks operating on the floor of Nigeria Exchange Group (NXG) was selected using purposive sampling technique. Three hundred and ninety four (394) copies of questionnaire were administered out of which two hundred and sixty (260) copies of questionnaire were returned for data analysis. Both descriptive and inferential statistics were employed for the purpose of the data analyse. Descriptive statistics involved the use of frequencies, tables, figure and percentage to analysis the socio-economic characteristics of the respondents while inferential statistics of Analysis of Variance (ANOVA) was used to examine the influencing fintech expenditure in Nigerian Deposits Money Banks

Results and Discussion

Determinant factors influencing fintech expenditure in selected Nigerian Deposits Money Banks

Table 4.3 shows the analysis of factor influencing fintech expenditure in listed deposits money banks as elicited from bank workers. The result shows that majority of respondents (92.30%) believe that the Cost of fintech infrastructure has a very high or high influence on their expenditure decisions. Only small fractions (7.70%) feel it has low or no influence. A significant number of respondents (69.23%) consider cost of Software acquisition to be a very high or high influence on fintech expenditure. However, a notable portion (30.77%) remains undecided, indicating some uncertainty or variability in its maintenance cost. Over half of the respondents (73.50%) see technological infrastructure as having a very high or high influence on fintech expenditure. However, a significant minority (26.50%) believes it has a low influence, indicating a potential divide in opinion on its importance. The majority of respondents (85.66%) view bank size as having a very high or high influence on fintech expenditure. A small percentage (8.23%) is either undecided or believes it has low influence, and 5.18% think it has no influence.

Cost of fintech infrastructure is the most influential factor, with 92.30% of respondents rating it as very high or high. Bank Size (BS) also has a significant influence, with 85.66% rating it as very high or high. Cost of Software acquisition and Maintenance cost are also influential, but there's more variability and undecided responses, especially in Maintenance cost with 30.77% undecided. The factors perceived to have the least influence are represented by the relatively low percentages of responses in the low and no influence categories across all factors, with the highest being for Cost of fintech infrastructure at 7.70%.

Furthermore, the results of the ANOVA presented in Table 4.3b support the assertion that there is significant differences in factors influencing fintech expenditure with variations in the comparison

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

of means across the independents variables incorporated into the model, as evidenced by the high Adjusted R^2 value of 0.77% and a statistically significant p-value of 0.000. The result indicates that Independent variables incorporated into this model have been able to reveal that there are differences in factor influencing fintech expenditure in selected sampled Deposit Money banks in Nigeria. Due to this result, the null hypothesis is rejected while the alternative hypothesis is accepted. That is there is a significant difference in factors influencing fintech expenditure in selected sampled Deposit Money banks in Nigeria.

Table 4.3a: Determinant factors influencing fintech expenditure in listed deposits money banks

Influencing Factors	Very High	High	Undecided	Low	No Influence
Cost of fintech infrastructure	195 (75%)	45 (17.30%)	- -	8 (3.08%)	12 (4.62%)
Cost of Software acquisition	170 (65.38%)	10 (3.85%)	80 (30.77%)	-	-
Maintenance cost	136 (52.41%)	57 (21.09%)	-	67 (26.50%)	-
Bank size	200 (78.51%)	26 (7.15%)	10 (3.05%)	10 (3.05%)	14 (5.18%)

Source: Author's Computation (2024).

Table 4.3b: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.883[a]	0.779	0.776	0.5329

a. Predictors: (Constant), Perceived Benefit (PB), Customer Base and Needs (CBN), Technological Infrastructure (TEI), Bank Size (BS)

Conclusion and Recommendations

It is therefore concluded there is significant difference in the factors influencing fintech expenditure in Nigerian deposits money banks. The study recommends that Nigerian Deposit Money Banks should provide continuous training and development programs should be implemented to ensure that accounting staff are proficient in using fintech technology platforms and understand their impact on the profitability of banks.

REFERENCES

Abad-Segura, E., González-Zamar, M. D., Vázquez-Cano, E., & López-Meneses, E. (2020). Financial technology: Review of trends, approaches, and key challenges. *Sustainability*, 12(12), 1-26.

Al Nawayseh, M. K. (2020). Fintech in COVID-19 and beyond: What factors are affecting customers' choice of fintech applications? *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 153. https://doi.org/10.3390/joitmc6040153

Al Nawayseh, M. K. (2020). FinTech in COVID-19 and beyond: What factors are affecting customers' choice of FinTech applications? *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 153

Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, 44(8), 681-691.

Barbu, C. M., Florea, D. L., Ogarcă, R. F., & Barbu, M. C. R. (2021). Financial technology (FinTech) and its implementation in the Romanian banking sector. *Sustainability*, 13(12), 675.

Beers, C., & Roland, G. (2008). Financial Technology Implementation: Driving Forces. *Journal of Industrial Economics*, 56(2), 45-60.

Brown, S. A., & Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS Quarterly*, 29(3), 399-426.

Brown, S. A., Venkatesh, V., & Bala, H. (2006). Household technology use: Integrating household life cycle and the model of adoption of technology in households. *The Information Society*, 22(4), 205-218.

Cenni, S., Monferrà, S., Salotti, V., Sangiorgi, M., & Torluccio, G. (2015). Credit rationing and relationship lending. Does firm size matter? *Journal of Banking & Finance, 53*, 249–265. https://doi.org/10.1016/j.jbankfin.2014.12.010

Chang, M. K., Cheung, W., & Lai, V. S. (2007). Literature derived reference models for the adoption of online shopping. *Information & Management*, 44(3), 328-341.

Darolles, S. (2016). The rise of fintechs and their regulation. *Financial Stability Review*, 20, 85-92.

Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475-487.

Edo, E., Etu, A., Tenebe, O., & Oladele, R. (2023). COVID-19, lifestyle shift, and the rise of offsite financial transactions: Financial institutions and fintech solutions. *Journal of Financial Digitalization, 11*(2), 205–225.

Frost, J. (2020). The economic forces driving fintech adoption across regions. *Journal of Financial Regulation and Compliance, 28*(3), 1–17. https://doi.org/10.1108/JFRC-01-2020-0004

Gai, K., Qiu, M., & Sun, X. (2018). A survey on FinTech. *Journal of Communications and Networks*, 20(3), 260-273.

Gupta, S., Dasgupta, S., & Gupta, B. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *Journal of Strategic Information Systems*, 17(2), 140-154.

Hassan, R., & Misrina, A. (2021). The impact of fintech on Islamic banking work-from-home operations during the COVID-19 pandemic. *Journal of Islamic Banking and Finance, 38*(2), 65–78.

Im, I., Hong, S., & Kang, M. S. (2011). An international comparison of technology adoption. *Information & Management*, 48(1), 1-8.

Khatun, F., & Shakila, N. (2021). Factors influencing the adoption of mobile banking during COVID-19: A study of Bangladesh. *Asian Journal of Applied Science and Technology, 5*(3), 1–11.

Kim, S. S., Malhotra, N. K., & Narasimhan, S. (2005). Two competing perspectives on automatic use: A theoretical and empirical comparison. *Information Systems Research*, 16(4), 418-432.

Knight, E., & Wójcik, D. (2020). FinTech, economy, and society: The rise of new finance in post-crisis Europe. *Global Finance Journal*, 100557.

Liberti, J. M., & Petersen, M. A. (2019). Information: Hard and soft. *The Review of Corporate Finance Studies, 8*(1), 1–41. https://doi.org/10.1093/rcfs/cfy009

Marikyan, D., & Papagiannidis, S. (2023). Organizational spending on technology: Influencing factors and business benefits. *Journal of Business Research, 149*, 20-35. https://doi.org/10.1016/j.jbusres.2022.01.034

Naz, S., Khan, S., & Hassan, M. (2022). FinTech growth during COVID-19 pandemic: Impact on financial outreach and networking. *Journal of Financial Services Marketing, 27*(4), 389–404. https://doi.org/10.1057/s41264-021-00106-0

Nicoletti, B. (2017). The future of FinTech: Integrating finance and technology in financial services. *Palgrave Macmillan*.

Nurlaela, S., Dalle, J., & Rizan, M. (2020). Financial technology and bank regulation in Indonesia. *International Journal of Innovation, Creativity and Change*, 13(8), 1681-1694.

Oyebiyi, J., Olatunji, B., & Adigun, A. (2017). Impact of ICT adoption on the performance of small and medium enterprises in Nigeria. *Journal of Economics and Management Sciences*, 10(4), 85-93.

Papagiannidis, S., & Marikyan, D. (2020). The workplace of the future: The use of digital technologies and the impact on business processes and employees. *Information Systems Frontiers, 22*(2), 469–483. https://doi.org/10.1007/s10796-019-09943-z

Ryu, H. S. (2018). What makes users willing or hesitant to use Fintech? The moderating effect of user type. *Industrial Management & Data Systems, 118*(3), 541–569. https://doi.org/10.1108/IMDS-07-2017-0325

Ryu, H. S. (2018). What makes users willing or hesitant to use FinTech? The moderating effect of user type. *Industrial Management & Data Systems*, 118(3), 541-569.

Sadigh, B., Pisani, A., & Wignall, A. (2021). The digital transformation roadmap: A comprehensive guide for companies on their digital transformation journey. *Digital Transformation Journal*, 7(1), 15-30.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]

Senyo, P. K., & Osabutey, E. L. (2020). Unearthing the antecedents of FinTech adoption. *Journal of Enterprise Information Management*, 33(2), 470-494.

Senyo, P. K., & Osabutey, E. L. C. (2020). Unearthing the antecedents to financial inclusion through fintech innovations. *Technological Forecasting and Social Change, 155*, 120030. https://doi.org/10.1016/j.techfore.2020.120030

Shakila, N. (2021). Adoption of mobile financial services during the pandemic: Challenges and opportunities in Bangladesh. *Journal of Digital Banking, 5*(2), 134-150.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 15(3), 325-343.

Song, J., Cao, Z., Liu, Y., & Chen, X. (2021). Blockchain technology and its role in FinTech development. *Journal of Systems and Software, 176*, 110928. https://doi.org/10.1016/j.jss.2021.110928

Stewart, H., & Jürjens, J. (2018). Data security and consumer trust in FinTech innovation in Germany. *Information & Computer Security, 26*(1), 109–128. https://doi.org/10.1108/ICS-06-2017-0039

Stewart, H., & Jürjens, J. (2018). The adoption of financial technology: Insights from corporate practice. *Journal of Strategic Information Systems*, 27(1), 7-22.

Tarsh, T. & Harraq, S. (2020). Financial technology in Arab countries: Challenges and prospects. *Journal of Financial Inclusion Studies*, 5(3), 35-48.

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695-704.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178.

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Xie, Y., Wang, W., Gong, Y., & Liang, H. (2021). Adoption of FinTech: Insights from a conceptual framework and empirical evidence. *Journal of Business Research*, 122, 213-224.

Xie, Y., Yin, J., Peng, M., & Huo, Y. (2021). Trust and FinTech adoption: A multi-group analysis comparing consumers with different risk perceptions. *Journal of Retailing and Consumer Services, 61*, 102586. https://doi.org/10.1016/j.jretconser.2021.102586

Yi, M. Y., Jackson, J. D., Park, J. S., & Probst, J. C. (2006). Understanding information technology acceptance by individual professionals: Toward an integrative view. *Information & Management*, 43(3), 350-363.

EDITOR-IN-CHIEF
Prof. R. Rena [South Africa]