TECHNOLOGY ADOPTION AND CUSTOMERS' PATRONAGE OF E-BANKING SERVICES OF DEPOSIT MONEY BANKS IN FCT, NIGERIA

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Abstract
The study examined the determinants of customers' patronage of e-banking services of deposit money banks in FCT Nigeria which was necessitated by the observed long queues in the banking hall despite the availability of these services which customers could take advantage of at the comfort of their homes for their transactions. Thus, the study examined the effect of perceived ease of use and perceived usefulness on e-banking patronage (EBP) in the FCT. Survey design was adopted and data was collected using structured five-point Likert scale questionnaire from a sample of 385 customers of deposit money banks in FCT, Nigeria who were selected conveniently and purposively. Partial least square structural equation modelling was used to analyse the data and the result revealed perceived Usefulness has positive and significant effect on e-banking patronage while perceived Ease of Use had a negative but significant effect on e-banking patronage in FCT, Nigeria. Hence the study recommends Banks should carefully analyse their e-banking workflows and processes to identify opportunities for simplification. This may involve streamlining the number of steps required to complete common tasks, reducing the amount of information input needed, or automating certain functionalities.
Keywords: *Customer patronage, Perceived Ease of Use, Perceived Usefulness and E-banking*

INTRODUCTION

The advent of internet, e-commerce, ICT and the response by users to this technology has created numerous service delivery opportunities for businesses, financial institutions inclusive. One of these delivery channels is electronic banking (e-banking). E-banking provides an opportunity to everybody to easily and conveniently access banking activities, which may include retrieving account balance, electronic money transfer, bills payment and other services (Adesina & Ayo, 2010; Ololade & Ogbeide, 2017). Furthermore, it has been explained that e-banking has increasingly become an essential aspect of modern-day banking services.

In Nigeria, e-banking adoption though growing rapidly, is still relatively low in comparison to developed economies. Data from the National Bureau of Statistics (NBS) shows that in the first quarter of 2021, the banking sector recorded e-payment transactions volume of #1.96bn. This increased in the second quarter by 13.11% to #2.22bn, while in the third quarter the volume recorded was #2.43bn indicating a growth rate of 9.49%. However, there was a 2.16% decrease (2.38bn) in e-transaction volumes in the fourth quarter of 2021 (National Bureau of Statistics, 2022). Furthermore, the population of people that make or receive digital payments is said to be 95% for high income economies and 35% for developing economies as of 2021(World bank, 2022). This shows a wide disparity between what is obtainable in high income economies and developing economies.

According to Ladipo et al. (2021), e-banking is the means of providing products and services of a bank through electronic networks. It provides an opportunity to everybody to easily and conveniently access banking activities, which may include retrieving account balance, electronic money transfer, bills payment and other services, while addressing the issues related to brick-and-mortar banks, such as queuing and traveling over a long distance in order to carry out banking transactions as simple as the aforementioned (Adesina & Ayo 2010; Ololade & Ogbeide 2017).

One of the main advantages of e-banking services is that it improves efficiency and effectiveness of operations so that transactions can be processed faster and most conveniently. It provides benefits to customers that includes reduced frequency of visiting banking halls as well as reduced cash handling.

However, despite these identified advantages of e-banking, there are still long queues in most banking halls and customers still handle too much cash (Ololade & Ogbeide 2017). It is desirable to attain a level of e-banking adoption where DMB customers perform significant banking activities through the e-banking channels and reduce the need for physically appearing at the banks and handling cash.

In order to explore factors that influence the adoption of e-banking among customers, different theoretical models have been adopted over time. The most prominent of these models is the Technology Acceptance Model (TAM) adopted from the Theory of Reasoned Action (Ladipo et al. 2021; Ridwan-Lanre et al. 2019). Akbar et al. (2021) argues that the TAM is a model that can be used to explore how people adopt new technologies, and it is derived from a psychological theoretical approach to explaining user ideas, attitudes and interests as well as behaviour. According to Singh (2012), TAM puts forward two theoretical constructs namely; Perceived usefulness (PU) and Perceived Ease of Use (PEOU) as the key determinants of a user's adoption of technology.

Akbar et al. (2021) refer to Perceived Usefulness as the acceptance by an individual that their job performance will be improved by using a system. In the e-banking context, the customer believes that making use of the said system, will help in fulfilling their financial and lifestyle needs as well as increase efficiency in conducting their banking transactions (Gamini & Galhena, 2021).

Perceived ease of use is the evaluation, by an individual, of the mental and physical effort that is required to use a technology (Kesharwani & Bisht, 2012). They further explain that the patronage of e-banking services may be encouraged if the customer perceives it to be easy to use. On the part of Akbar et al. (2021), they describe perceived ease of use as the main determinant of user attitude and behavioural intentions to accept and use technology, and that previous usage experience may influence customers opinion on the ease of use of an e-banking service (Gamini & Galhena, 2021).

Ololade and Ogbeide (2017) argue that some banking customers have consciously or unconsciously refused the use of e-banking despite its attendant benefits. This problem, they say, is more prevalent in developing countries such as Nigeria. Consequently, this issue has attracted the attention of many scholars with different views of what the issues are, how to resolve them and how important it is to have such resolutions in an ever-evolving banking system.

Despite the numerous benefits of e-banking, its adoption and patronage in the Federal Capital Territory (FCT), Nigeria, is still low. This is evident in the long queues that are still common at bank branches. This is a problem because it wastes customers' time and productivity, leads to frustration and dissatisfaction with banking services, and create unnecessary financial and human resource burden on the banks. Additionally, it has been reported that there was a 2.16% decrease (2.38bn) in e-transaction volumes in the fourth quarter of 2021 (National Bureau of Statistics, 2022). Furthermore, the population of people that make or receive digital payments is said to be 95% for high income economies and 35% for developing economies as of 2021(World bank, 2022).

The Central Bank of Nigeria's (CBN) policy regarding cash transactions restricts over the counter cash withdrawal to above N100,000, and mandates cash handling charge for daily withdrawals that surpass N500,000 for individuals and N3,000,000 for corporations. This initiative aims to decrease the circulation of physical cash in the economy, while promoting a shift toward electronic transactions such as payments for goods and services, as well as money transfers (CBN, 2013).

This study evaluates technology adoption and customer patronage of e-banking services of DMBs in FCT, Nigeria. It uses the constructs of the Technology Acceptance Framework to critically assess determinants of e-banking patronage and to give appropriate recommendations, with specific focus on the behaviours of customers of DMBs in the FCT that have made use of e-banking services.
To achieve the said main objective of the study, it was broken down into specific objectives, as follows:

i. To determine the effect of perceived usefulness on customer adoption of e-banking services amongst deposit money bank customers in the FCT, Nigeria.
ii. To evaluate the effect perceived ease of use has on customer adoption of e-banking services amongst deposit money bank customers in the FCT, Nigeria.

LITERATURE REVIEW

Conceptualisation

Technology adoption refers to the process by which individuals, organizations, or societies accept, integrate, and utilize new technologies to meet their needs or solve problems. It involves stages ranging from initial awareness to full integration and use. In the context of electronic banking (e-banking), technology adoption specifically denotes the uptake and implementation of digital solutions such as online banking platforms, mobile apps, or payment systems, transforming traditional banking processes into more customer-centric, efficient, and accessible systems (Goyal et al., 2023; Mogaji, 2023). From the researcher's view, technology adoption is the acceptance of a certain technology in order to provide ease and convenience for the user.

Electronic banking (e-banking) involves the use of electronic devices and internet-based systems to provide banking services and products to customers anytime and anywhere. It digitizes traditional banking activities, enabling customers to access accounts, conduct transactions, and obtain financial information without visiting a physical branch (Inegbedion et al., 2020; Ghani et al., 2022). E-banking utilizes information and communication technology to facilitate services like account management, funds transfer, and electronic bill payment, positioning the internet as a key delivery medium for efficient and accessible banking operations (Raji et al., 2021). This transformation empowers users with comprehensive electronic access to financial services, advancing both immediate and long-term banking goals. From the researcher's point of view, e-banking refers to the use of information and communication technology to transform the aspect of banking as it relates to the provision of services and management of customer relationship.

Perceived usefulness (PU) refers to an individual's belief that using a particular system, enhances their efficiency and overall performance in achieving specific goals. It emphasizes the system's ability to save time, simplify tasks, and fulfil financial and lifestyle needs. According to Ghani et al. (2022) and Lwoga & Lwoga (2017), PU significantly influences a user's likelihood of adopting a technological service by shaping their expectations of its utility. In the context of e-banking, PU encompasses a user's assessment of how effectively electronic systems outperform conventional banking methods in offering convenience, efficiency, and accessibility, thereby driving adoption rates (Rahi et al., 2017).

Perceived ease of use (PEOU) refers to the extent to which users believe that a technological system or innovation is simple to understand and use, requiring minimal mental or physical effort (Gamini & Galhena, 2021; Tiwari et al., 2021). It reflects how conveniently a system aligns with a user's needs and activities, significantly influencing their adoption and continued use (Jayathilaka et al., 2020). In the context of electronic banking, PEOU is an individual's perception of how effortlessly they can utilize e-banking services, which shapes their view of the system's usefulness and drives adoption. When users find a technology comfortable and easy to use, they are more likely to explore its full potential and integrate it into their routines (Tiwari et al., 2021). Here, we define ease of use as the extent to which customer' use of Internet banking services is perceived as easy or effortless.

Customer patronage refers to the consistent and continued use of a service or technology, driven by trust, loyalty, and user conviction about its benefits (Jouda et al., 2020). In the context of e-banking, patronage is the personal decision to habitually adopt and rely on electronic banking services for financial transactions, reflecting customers' acceptance and integration of these technologies into their routines (Ladipo et al., 2021). It signifies the degree to which users embrace e-banking as a preferred and reliable service option.

Empirical Review

Perceived Usefulness and E-banking Patronage

Parveen et al. (2023) conducted a study on the adoption of electronic banking services among bank customers in Delhi, India. A causal survey design was employed in the study, dependent on the use of primary data, collected through the administration of a structured questionnaire. A sample of 200 respondents, made of customers who were existing bank account holders, provided the data used in the study. Respondents were chosen with the random sampling selection technique. Cross tabulation and ANOVA were applied in processing the collected data. The findings indicated that perceived usefulness was a positive and significant determinant of adopting electronic banking among customers. It is however, hard to be confident in the accuracy of the study as the specific coverage was not stated in terms of how many banks were involved and how the sampling procedure was carried out. Additionally, the use of mixed methods was incorrectly stated in the study, i.e., usage of both quantitative and qualitative approaches. No indication of this was seen in the analysis.

The study carried out by Adepoju and Adeniji (2020) explored the patronage of e banking services in an "unnatural environment". To achieve this, primary data was collected, in a questionnaire survey from a random sample of 304 permanent staff of Federal Medical Centre, Owo, Ondo state, Nigeria. PLS-SEM was applied in the analysis of the collected data. Findings showed that customer perceived usefulness was a non-significant factor influencing the adoption of e-banking services at 5% level of significance. It was not, however, clear whether the respondents used were actually a sample, or a census of permanent staff in the centre; no explication was given as to the population of the study. Secondly, the study was limited to Federal Medical Centre staff, greatly restricting the scope of inference of study findings. Furthermore, the study claimed to be focused on an unnatural environment as its disparity from other pertinent studies, yet, no clear explanation was given as to what made the coverage area an unnatural environment, or what for that matter, made coverage areas of other studies natural environments.

Perceived Ease of Use and E-banking Patronage

Nurahmasari et al. (2023) did a study in Indonesia aimed at assessing the patronage of electronic banking services among Gen Z, based on the Technology Acceptance Model (TAM). The study took a causal approach, in which primary data was collected from a sample of 150 individuals who were generation Z. Data collection was carried out in a questionnaire survey, involving a structured instrument with closed-ended questions, with variable scales measured in the 5-point Likert scale format. The questionnaire was administered online using Google Forms. Multiple linear regression was used in the study in the analysis of the collected data. The findings arrived at indicated that perceived ease of use was a positive and significant determinant of the patronage of e-banking among surveyed respondents. However, the sampling information provided by the study was very inadequate. One of the reasons for specificity in study methodology is to be able to allow for replicability and confirmation of obtained results. The study failed in this area. Furthermore, the presentation of results and findings was poor, making it hard to follow and understand.

Obeng-Ayisi et al. (2022) conducted an empirical investigation into factors responsible for the decision of customers to adopt e-banking in Ghana. A survey was carried out in the course of the study involving 351 customers across five selected GCB bank branches in Kumasi Metropolis in Harper Road, Asafo, and Tech Junction. Random sampling was employed in the selection of survey participants, who were requested to provide their views and opinions to items of a structured closed-ended questionnaire, forming measurement scales for the variables of the study. The obtained data was analysed using simple percentages, graphs, mean and standard deviation. Findings arrived at showed that perceived ease of use was a factor that exerted negative impact on the use of e-banking among bank customers. The study was, however, not without a few identified issues, such as the fact that linear regression was stated to have been used in analysing the collected data, which was inaccurate as no indication of this was found in the study analysis. Also, the study was restricted to only a specific bank in Kumasi city, which limits the ability of the study findings to be generalized to any form of wider context.

In Nigeria, using a survey design, Inegbedion's (2018) study examined influencing factors of customer adoption of electronic banking in the country. Using a systemic sampling technique to select respondents, primary data was collected by administering a 3-point Likert scale questionnaire to 250 customers of Zenith bank in Benin city, out of which 212 of the questionnaires were retrieved and used for data analysis. A one-sample t-test and the F test were used to analyse the survey data. Findings arrived at by the study indicated that Perceived Ease of Use influenced customer attitude toward electronic banking. However, the study was restricted to Zenith bank, lending credence to the importance of a more comprehensive empirical inquiry, such as the current research, which will cover a cross-section of banks. Additionally, the study was conducted in Benin city, and in that, adding to the dearth of literature on studies specifically focused on the FCT, which the current study, among other things, is aimed at addressing.

Theoretical Framework

This study is grounded in the Technology Acceptance Model (TAM), proposed by Davis in 1989 as an extension of the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB). TAM explains or predicts users' beliefs, attitudes, intentions, and behaviours regarding the acceptance of information technology (Adesina & Ayo, 2010; Dzandu et al., 2016). According to the model, two key behavioural beliefs influence an individual's intention to use a technology: perceived ease of use (PEOU) and perceived usefulness (PU). These beliefs form the foundation for understanding user acceptance and the adoption of IT systems.

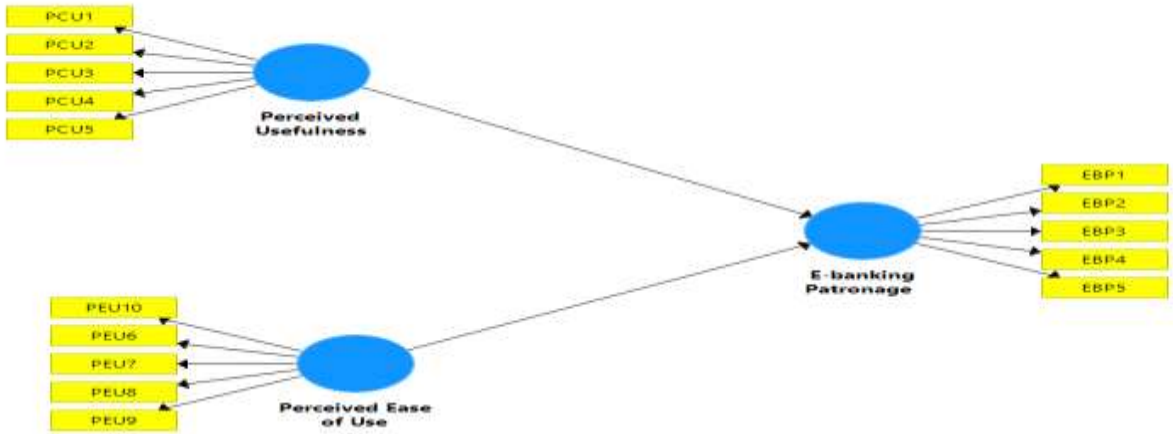
Ridwan-lanre et al., (2018) ascertain that, in order to understand the patronage of e-banking, TAM has been used by different researchers in different countries. Some of which are; Sri lanka (Aboobucker et al, 2018), India (Sinha and Mukherjee, 2016), Tunisia (Nasri & Charfeddine, 2012), Malay and Chinese ethnic group (Khalil, Sutanonpaiboon, and HamimahMastor, 2010) and Taiwan (Lee, 2009).

Konalingam et al. (2017) opine that TAM offers a strong and simple explanation of the acceptance of technology and the behavior of the technology users and it predicts the usage behavior of a new technology by its users. However, as argued by Ladipo et al. (2021), the conventional TAM is ineffective in explaining intentional adoption assessment of certain electronic services by customers, also that the model ignores PU as a contributory factor.

METHODOLOGY

This study adopted a survey research design. The population of the study consist all the customers of deposit money banks in FCT. The population of this kind as regards to customers is infinite. Therefore, Cochran formula was used to obtain a sample size of 385. The respondents were selected using convenience and purposive sampling technique. The choice of purposive sampling technique is to ensure that only customers who have access to e-banking platforms but yet visit the bank for transactions were selected. Five-point Likert scale questionnaire adapted from (Kim et al., 2010; Ridwan-lanre et al., 2018) was administered to the sampled respondents. Data collected were analysed using partial least square structure equation modelling and the model of the SmartPLS. The use of PLS-SEM is due to its relaxed distributional assumptions as explained by Hair, et al., (2019). The model of the analysis is specified in model.

Model Specification



Source: SMART-PLS Output, 2024

Fig. 1: Model Specification showing the Constructs and the Items

Table 1 contains detailed profile of all variables specified in the study model.

Table 1: Variable Information

Name	Definition	Description	Source
eBP	e-banking Service Patronage	Dependent variable of the model of the study, used to measure adoption of e-banking services among study respondents	See, for example, Echchabi's (2018), Carranza et al. (2021), Adepoju and Adeniji (2020)
PCU	Perceived Usefulness	Independent variable. Used to measure the extent to which an individual believes that using e-banking services is convent, i.e., serves the need, and saves time and cost	Nayanajith et al. (2021), Carranza et al. (2021), Chang et al. (2020)
PEU	Perceived Ease of Use	Independent variable. Measures the extent to which an individual feels that using e-banking services is free of effort. i.e., the level to which usage is simple.	Akbar et al. (2021), Andre et al. (2021), Reepu (2022)

RESULTS AND DISCUSSION

Assessment of measurement model

In assessing the measurement model, we begin by assessing the item outer loadings. As a rule, loadings above 0.7 are recommended, as they indicate that the construct explains more than 50 percent of the indicator's variance, thus providing acceptable item reliability (Hair, et al., 2019). The result in table 2 shows loading of above 0.7 for all the constructs, hence they were deemed acceptable by the study.

Table 2: Factor Loadings of the Constructs

Items	Loading
PCU1	.832
PCU2	.854
PCU3	.843
PCU4	.802
PCU5	.782
PEU6	.894
PEU7	.849

PEU8	.873
PEU9	.833
PEU10	.893
EBP1	.811
EBP2	.719
EBP3	.916
EBP4	908
EBP5	.862

Source: SMART-PLS Output, 2024

To establish internal consistency of the study constructs, the Cronbach's alpha and composite reliability were examined. According to Hair, et al., (2019) the minimum threshold for measuring composite reliability (CR) and Cronbach's alpha is 0.7. Also The minimum value of the AVE should be higher than 0.50. All the constructs satisfied this requirement as shown in table 3 and as such are valid for the study.

Table 3: Construct Reliability and Validity of the Indicators

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Perceived Usefulness	.919	.939	.755
Perceived Ease of Use	.882	.914	.679
E-banking Patronage	.899	.926	.716

Source: SMART PLS Output, 2024

Discriminant validity is the extent to which a construct is empirically distinct from other constructs in the structural model. To assess discriminant validity, Henseler et al. (2015) proposed the Heterotrait-monotrait (HTMT) ratio of the correlations. They explain that discriminant validity problems are present when HTMT values are higher than 0.90. This is not the case in this study as shown in table 4 below

Table 4: Heterotrait-Monotrait Ratio (HTMT) Criterion

	Perceived Usefulness	Perceived Ease of Use	E-banking Patronage
Perceived Usefulness	1.00		
Perceived Ease of Use	.588	1.00	
E-banking Patronage	.723	.523	1.00

Source: SmartPLS Output, 2024

Assessment of Structural Model

The coefficient of determination, R-Square value on table 5 show 0.733, meaning that 73.3% of customers Patronage were influenced by e-banking service variables. Meanwhile, the remaining 26.7% was affected by other factors not mentioned in the study. Also, the $\mathbf{Q^2}$ value of 0.715 indicates high predictive relevance.

Table 5: Coefficient of Determination (R^2) and Predictive relevance ($Q^{2)}$

	R Square	R^2Adjusted	Q Square
E-banking Patronage	0.733	0.732	0.715

Source: SMART-PLS Output, 2024

Test of Hypotheses

Table 6 shows the path coefficients, t-values and p-values used to test the hypotheses of the study:

Table 6: Path Coefficient of the Model

Variable	Beta	T Statistics (|O/STDEV|)	P Values	Decision	F^2 value
Perceived Usefulness -> E-banking Patronage	0.510	6.102	0.000	Rejected	0.206
Perceived Ease of Use -> E-banking Patronage	-0.371	4.382	0.000	Rejected	0.108

Source: SmartPLS Output, 2024

Hypothesis One

H_{O1}: Perceived Usefulness has no significant effect on customers patronage of e-banking services of deposit money banks in FCT, Nigeria.

The result from table 6 shows that Perceived Usefulness has positive and significant effect on patronage of E-banking services of deposit money banks in FCT, Nigeria with $\beta = 0.510$ and $p = 0.000$. Thus, null hypothesis one which states that Perceived Usefulness has no significant effect on customers patronage of e-banking services of deposit money banks in FCT, Nigeria was rejected at 5% level of significance. The alternative hypothesis which states that Perceived Usefulness has significant effect on E-banking Patronage in FCT, Nigeria will therefore be accepted.

This implies that customers who experience the usefulness of e-banking services, will develop a habit of using the system, leading to increased patronage over time. This finding is consistent with that of Parveen et al. (2023) who found that that Perceived Usefulness has positive and significant effect on E-banking Patronage. However, the finding disagrees with that of Adepoju and Adeniji (2020) who found positive but insignificant effect on E-banking Patronage.

Hypothesis Two

H_{O2}: Perceived Ease of Use has no significant effect on customer patronage of E-banking services of deposit money banks in FCT Nigeria.

The result from table 6 shows that Perceived Ease of Use has negative but significant effect on E-banking Patronage of deposit money banks in FCT, Nigeria, with $\beta = -0.371$ and $p = 0.000$. Thus, null hypothesis two which states that Perceived Ease of Use has no significant effect on customer patronage of E-banking services of deposit money banks in FCT, Nigeria was rejected at 5% level of significance. Thereby accepting an alternative hypothesis which states that Perceived Ease of Use has significant effect on costumer patronage of E-banking services of deposit money banks in FCT, Nigeria.

This implies that customers may expect a certain level of effort required to use e-banking services. If the system is perceived as not easy to use, it may not meet their expectations or appear sufficiently sophisticated, leading to lower patronage. This finding is consistent with that of Obeng-Ayisi et al. (2022) who found that Perceived Ease of Use has negative but significant effect on E-banking Patronage. Also, the finding is inconsistent with that of Nurahmasari et al. (2023) who found positive and significant effect on E-banking Patronage.

The f^2 examines the effect caused on the endogenous construct's R^2 value as a result of removal of a certain predictor construct. Cohen (1988) guideline was used to measure the effect size which revealed that all relationships were either small or medium effect.

CONCLUSION AND RECOMMENDATIONS

This study examined technology adoption and customer patronage of e-banking service of deposit money banks in FCT, Nigeria. Based on the research findings, the study concluded that PEOU and PU are significant factors which affect and determines adoption of e-banking services of deposit money

banks in FCT, Nigeria. The study also concludes that Perceived Usefulness is a factor that influences a reasonable level of patronage of e-banking services, but the weakness experienced in terms of Perceived Ease of Use as it relates to the use of e-banking platforms has been a significant stumbling block to their overall patronage as well as reluctance to use the e-banking platforms by the customers.
Based on the findings and conclusions above, the study recommends thus:

Banks should continually enhance the design and features of their e-banking platforms to improve the perceived usefulness from the customer's perspective. This could include improving user interfaces, adding more self-service capabilities, streamlining transaction processes, and integrating useful financial management tools. They should also actively gather customer feedback on their e-banking services and continuously optimize the platforms based on user needs and preferences. This will help ensure that the e-banking services remain highly useful and relevant to customers.

Banks should carefully analyze their e-banking workflows and processes to identify opportunities for simplification. This may involve streamlining the number of steps required to complete common tasks, reducing the amount of information input needed, or automating certain functionalities. Also, they should regularly collect feedback from customers on the perceived ease of use of their e-banking services and use these insights to iteratively improve the platforms. This will help ensure that the e-banking experience remains user-friendly and accessible.

References

Adepoju, A., & Adeniji, A. (2020). Technology acceptance of e-banking services in an unnatural environment. SEISENSE Journal of Management, 3(3), 34-50. doi: 10.33215/sjom.v3i3.336.

Adesina, A. A., & Ayo, C. K. (2010). An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria. *Journal of Internet Banking and Commerce*, *15*(1), 1–13.

Adiele, K. C., Grend, M. D., & Chinedu, E. A. (2015). Physical Evidence and Customer Patronage: An Empirical Study of Nigeria Banking Sector. *British Journal of Economics, Management & Trade*, *7*(3), 188–199. https://doi.org/10.9734/bjemt/2015/14176

Akbar, Y. R., Zainal, H., Basriani, A., & Zainal, R. (2021). Moderate Effect of Financial Literacy during the Covid-19 Pandemic in Technology Acceptance Model on the Adoption of Online Banking Services. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *4*(4), 11904–11915.

Andre, Pebriyantib, H. L., Kartonoc, R., & Sundjaja, A. M. (2021). The effect of perceived usefulness, perceived ease of use, perceived risk and technology readiness on intention to use e- banking in Jakarta. Turkish Journal of Computer and Mathematics Education, 12(10), 6829 – 6836.

Ayo, C. K., Oni, A. A., Adewoye, O. J., & Eweoya, I. O. (2016). E-Banking Users' Behaviour: E-Service Quality, Attitude, and Customer Satisfaction. *International Journal of Bank Marketing*, *34*(3), 347–367. https://doi.org/https://doi.org/10.1108/ijbm-12-2014-0175

Carranza, R., Díaz, E., Sánchez-Camacho, C., & Martín-Consuegra, D. (2021). e-Banking Adoption: An Opportunity for Customer Value Co-creation. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.621248

Central Bank of Nigeria. (n.d.). *Cashless policy*. Retrieved November 21, 2024, from https://www.cbn.gov.ng/cashless/#:~:text=The%20Central%20Bank%20of%20Nigeria,N3%2C000%2C000%20for%20Corporate%20bodies

Chang, Y., Enkhjargal, U., Huang, C., Lin, W., & Ho, C. (2020). Factors affecting the internet banking adoption. Jurnal Ekonomi Malaysia, 54(3), 117 – 131. doi: g/10.17576/JEM-2020- 5403-9.

Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India – An empirical study. *International Journal of Bank Marketing*, *37*(7), 1590–1618. https://doi.org/10.1108/IJBM-09-2018-0256

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers

Dzandu, M. D., Boateng, H., Agyemang, F., & Quansah, F. (2016). Social media adoption among university students : the role of gender , perceived usefulness and perceived ease of use. *Int. J. Social Media and Interactive Learning Environments*, *4*(2), 124–136.

Echchabi, A. (2018). E-banking acceptance in Thailand: an emphasis on Islamic banks' customers. European Journal of Islamic Finance, 9, 1-4.

Gamini, W. D., & Galhena, B. . (2021). DETERMINANTS OF MOBILE BANKING ADOPTION: THEORY OF PLANNED BEHAVIOUR PERSPECTIVE. *International Research Confrence on Management and Finance*, *16*, 231–258. https://www.ptonline.com/articles/how-to-get-better-mfi-results

Ghani, E. K., Ali, M. M., Musa, M. N. R., & Omonov, A. A. (2022). The Effect of Perceived Usefulness, Reliability, and COVID-19 Pandemic on Digital Banking Effectiveness: Analysis Using Technology Acceptance Model. *Sustainability (Switzerland)*, *14*(18). https://doi.org/10.3390/su141811248

Goyal, D., Varma, R., Rada, F., & Pande, A. (2023). *Why fintech is key to the future of banking*. BCG. Retrieved from www.bcg.com

Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", European Business Review, Vol. 31 No.1, pp.2- 24. https://doi.org/10.1108/EBR-11-2018-0203

Hajli, M. N. (2013). A study of the impact of social media on consumers. *International Journal of Market Research*, *53*(6), 387–404.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Inegbedion, H. E. (2018). Factors that Influence Customers' Attitude toward Electronic Banking in Nigeria. *Journal of Internet Commerce*, *17*(4), 325–338. https://doi.org/10.1080/15332861.2018.1463482

Jayathilaka, R., Pathiratne, H., Jayanath, C., Perera, H., Wickremasinghe, S., & Dharmasena, T. (2020). The usage of cash deposit machines: An empirical analysis of identifying determinant factors. *Sri Lankan Journal of Banking and Finance*, *3*(01), 1–17.

Jouda, H., Jarad, A. A., Obaid, T., Mdallalah, S. A., & Awaja, A. (2020). Mobile Banking Adoption: Decomposed Theory of Planned Behavior with Perceived Trust. *SSRN Electronic Journal*. https://doi.org/https://doi.org/10.2139/ssrn.3660403

Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International Journal of Bank Marketing*, *30*(4), 303–322. https://doi.org/10.1108/02652321211236923

Konalingam, K., Ratnam, U., Sivapalan, A., & Naveen, M. (2017). Enhancing Customer Loyalty Through E-Banking Practices. *Business Management and Strategy*, *8*(2), 45. https://doi.org/10.5296/bms.v8i2.12054

Ladipo, P., Dixon-Ogbech, B., Enyinnaya, N., & Akeke, O. (2021). Influence of Technology Acceptance Model (Tam) on Customer Adoption of E-Banking Practice in Lagos State. *Journal of Social Sciences*, *4*(3), 124–138. https://doi.org/10.52326/jss.utm.2021.4(3).13

Lwoga, E. T., & Lwoga, N. B. (2017). User Acceptance of Mobile Payment: The Effects of User-Centric Security, System Characteristics and Gender. *The Electronic Journal of Information Systems in Developing Countries Www.Ejisdc.Org*, *81*(3), 1–24. https://doi.org/10.1002/j.1681-4835.2017.tb00595.x

Mogaji, E. (2023). Redefining banks in the digital era: a typology of banks and their research, managerial, and policy implications. *International Journal of Bank Marketing*, 41(7), 1899-1918.

Nayanajith, D. A. G., Dissanayake, D. M. R.., Weerasiri, R. A. S., & Damunupola, K. A. (2021). Perceived Trust of E-Services, Perceived Usefulness and Adoption of E-Banking amongst the Students of University of Kelaniya: A Relational Study. Vidyodaya Journal of Management, 7(1), 27-59. doi: 10.31357/vjm.v7i1.4917.

Nurahmasari, M., Silfiyah, S. N., Pangaribuan, C. H. (2023). The intention to use digital banking services among gen z in Indonesia based on the technology acceptance model (TAM). Jurnal Manajemen dan Bisnis Madan, 5(1), 15-31.

Obeng-Ayisi, E., Quansah, C., Mensah, R. O., & Acquah, A. (2022). An investigation into factors impacting on customer decision to adopt e-banking: viewpoints of GCB customers. Technium Social Sciences Journal, 33, 357–371. doi: 10.47577/tssj.v33i1.6572.

Parveen, S., Saghir, V., & Beg, S. (2023). AN EMPIRICAL STUDY OF CUSTOMER SATISFACTION TOWARDS E-BANKING SERVICES IN DELHI. *Indian Journal of Finance and Banking*, 54–62. https://doi.org/10.46281/ijfb.v13i1.1974

Rahi, S., Ghani, M. A., & Alnaser, F. M. I. (2017). Predicting customer's intentions to use internet banking: The role of technology acceptance model (TAM) in e-banking. *Management Science Letters*, *7*(11), 513–524. https://doi.org/10.5267/j.msl.2017.8.004

Raji, A. A., Zameni, A., & Abdulwakil, M. M. (2021). Effect of Electronic Banking on Customer Satisfaction in Kwara State, Nigeria. *International Journal of Academic Research in Business and Social Sciences*, *11*(7). https://doi.org/10.6007/ijarbss/v11-i7/10258

Reepu, R. A. (2022). Perceived usefulness, perceived trust and ease of use in adoption of online banking services. Science, Education and Innovations in the Context of Modern Problems, 5(3), 322-328.

Ridwan-Lanre, I., Eregha, P. B., & Sampson, H. (2019). Determinants of E-Banking Adoption in Lagos State. *NDIC Quarter*, *2014*. https://ndic.gov.ng/wp-content/uploads/2020/08/NDIC-Quarterly-Vol-34-No-12-2019-Article-Determinants-of-E-Banking-Adoption-in-Lagos-State.pdf

Singh, S. (2012). An Empirical Investigation of the Determinants of Users Acceptance of E-Banking in Singapore (A Technology Acceptance Model). *International Journal of Management and Business Research*, *2*(1), 69–84.

Tiwari, P., Tiwari, S. K., & Gupta, A. (2021). Examining the Impact of Customers' Awareness, Risk and Trust in M-Banking Adoption. *FIIB Business Review*, *10*(4), 413–423. https://doi.org/10.1177/23197145211019924

Wiratmadja, I. I., Dameria, N., & Kurniawati, A. (2017). The Role of Perceived Trust of Physical Bank towards Perceived Risk on Internet Banking Acceptance from the User Perspective. *Journal of Economics, Business and Management*, *5*(4), 168–172. https://doi.org/10.18178/joebm.2017.5.4.506

Appendix I: SAMPLE QUESTIONNAIRE

E-Banking Patronage

1. I am comfortable doing transactions via e-banking
2. I am very likely to use e-banking services again
3. I use e-banking services for most of my banking needs.
4 Using e-banking services saves me time compared to visiting a physical bank branch
5 Overall, I am satisfied with the features and functionalities offered by my bank's e-banking platform

Perceived Usefulness

1. I find the interface of the e-banking platform to be user-friendly
2. Interaction with e-banking platforms does not require mental effort
3. I am confident in my ability to use the e-banking platform effectively
4. I can recover from errors quickly when using the e-banking platform
5. E-banking service makes it easier for me to carry out transactions

Perceived Ease of Use

1. On average, I find what I need using e-banking
2. Using e-banking services allows me to make payments faster
3 E-banking is useful because I can use it anytime
4 E-banking platform offers a wide range of features that meet my banking needs
5 The e-banking platform offers cost-effective solutions for managing my accounts