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Perceived Risk, Technology Readiness and Adoption of Online Banking among Undergraduates Students

Ifenna D. Ezeanya
Kingsley Chinedu Nwizu
Chiamaka O. Joe-Akunne
Okechukwu Samuel Chukwuma

Department of Psychology, Nnamdi Azikiwe University, Awka

Corresponding author: Ifenna D. Ezeanya

E- mail: id.ezeanya@unizik.edu.ng

Abstract

The study investigated the relationships between perceived risk, technology readiness and undergraduates' adoption of online banking. Participants were 250 undergraduates of Nnamdi Azikiwe University, Awka. They included 118 (47.2%) males and 132 (52.8%) females, whose ages ranged between 18 to 36 years, with the mean age of 21.74 and standard deviation of 2.044. The Risk Perception Scale (Featherman & Pavlov, 2003); Technology Readiness Scale (Celik & Kocaman, 2017); and Online Banking Adoption Scale (Pikkarainen et al., 2004) were used for data collection. The design was correlational design, while Pearson Product Moment Correlation Analysis was used for data analysis. The result revealed between perceived risk did not significantly relate with adoption online banking ($r = -.024, p > .05$) while technology acceptance was found to have significant relationship with adoption online banking ($r = .233, p < .001$). It also further revealed that significant relationship exist between perceived risk and technology acceptance ($r = -.176, p < .005$). Based on the findings, the researcher recommended amongst financial institutions, educational campaigns and universities so in order to improve the student's experience on the use of online banking.

Keywords: *Perceived risk, technology readiness, online banking, undergraduates*

Introduction

Evolution in digital technology has significantly transformed the banking sector, offering new and innovative ways to conduct financial transactions. Today most financial institution has adopted online transaction as an alternative to offline transaction. Online banking allows users to manage their bank accounts and perform financial activities via the internet in a convenient and efficient manner (Pikkarainen et al., 2004). This mode of banking offers various services, including fund transfers, bill payments, and account management, which in recent past required physical presence at bank branches (Liao & Cheung, 2002, Ezeanya et al., 2024).

Online banking is a method of banking that allows registered users to access their bank accounts or monetary balances through the internet (Nayanajith et al., 2021). It offers customers almost every service traditionally available through a local branch including deposits, transfers, and online bill payments. It is more flexibility than traditional banking as it gives customers opportunity to do wherever they want any time and place like in their homes, offices, or on the go although customer support might not be available at all hours.

In Nigeria as of today all the financial institutions have adopted online banking as alternative to traditional banking method. However despite the adoption of online banking, many Nigerian banking customers are still sluggish in accepting these technologies (Ndubisi, 2007). This is worrisome because the adoption of online banking by customers is more important than the services of sellers in terms of its spread. Although customers' acceptance is a significant factor

in influencing the pace of change in the financial industry, empirical investigations on what is holding customers back from accepting online banking have been sparse. In an attempt to unravel some of these factors, this research considers the associations between customers perceived risk, technology readiness as major challenges to students adoption of online banking.

Perceived risk plays a crucial role in the decision-making process of adopting new technologies. It refers to the potential negative consequences that users believe they might face when engaging with online banking services, such as financial loss, privacy invasion, and identity theft (Featherman & Pavlou, 2003). These perceived risks can significantly deter individuals, particularly younger users who may lack experience and confidence in managing online financial transactions. Researches has shown that risk perception influences customers' intention and behaviour (Zhou et al., 2021; Nguyen, et al., 2021; Forsythe et al., 2020, Ezeanya et al., 2023).

The relationship between perceived risk and online banking is critical in understanding consumer behavior and adoption of digital financial services. Perceived risk in the context of online banking refers to the potential negative consequences that consumers associate with using these digital services, such as financial loss, privacy breaches, and fraud. This perceived risk can significantly influence a consumer's decision to adopt or continue using online banking services. In a study conducted by Alalwan et al., (2018) they discovered that the higher the perceived risk, the lower the likelihood of consumers engaging with online banking. This study found that concerns over security, particularly regarding the protection of personal and financial data, are the primary drivers of perceived risk, which can lead to hesitation or outright rejection of online banking services.

Technology readiness, on the other hand, reflects an individual's propensity to embrace and utilize new technologies for accomplishing goals in their personal and professional lives (Yuen et al., 2021). It encompasses multiple dimensions such as optimism, innovativeness, discomfort, and insecurity towards technology (Parasuraman, & Colby, 2015). Knowledge and disposition to embrace new technology can mitigate concerns related to perceived risks and encourage the adoption of online banking among undergraduates. Tseng et al. (2021) argue that individuals with higher technology readiness are more likely to adopt and benefit from new technologies, including online banking. Individuals with higher levels of technology readiness are more likely to perceive online banking as beneficial and manageable, thus demonstrating a greater willingness to adopt such services (Martins et al., 2014).

Yuen et al. (2021) observe that technology readiness plays a crucial role in determining the adoption and usage of online banking services. In a study conducted by Rahi et al. (2018) they observed that individuals with higher technology readiness are less likely to perceive online banking as risky, as they feel more capable of managing potential technological challenges and security concerns that may arise. This readiness reduces the psychological barriers associated with online banking and increases the likelihood of regular usage.

Moreover, technology readiness has been found to directly influence the perceived ease of use and usefulness of online banking platforms, which are key determinants in the Technology Acceptance Model (TAM). Featherman and Hajli, (2016) found that individuals who are technologically ready are more inclined to find online banking convenient and efficient, which further drives their adoption and continued use of these services. This relationship indicates that as technology readiness increases, users are more likely to perceive online banking as a beneficial tool for managing their finances, leading to higher adoption rates.

Furthermore, the relationship between technology readiness and online banking has implications for financial institutions seeking to expand their digital user base. Banks that target individuals with lower levels of technology readiness may need to invest in educational programs or user-friendly technologies to bridge the gap. This approach can help reduce the learning curve associated with online banking and foster greater confidence among users, ultimately leading to increased adoption. Chuang et al. (2020) reinforced this view by showing that banks that invest in enhancing their customers' technology readiness through training and support services see higher engagement with their online platforms, highlighting the importance of this relationship in the broader digital banking ecosystem.

From the literature, it is evident that the interplay between perceived risk and technology readiness in the context of online banking adoption among undergraduates in Nigeria has not been thoroughly explored. In this sense, investigating the relational dynamics between perceived risk, technology readiness, and the adoption of online banking among undergraduates in Nigeria is timely. The study provides insights into how these factors interact and influence the acceptance of online banking, thereby offering valuable implications for both academic research and practical applications in the banking sector. The findings informed the development of strategies to enhance the user experience and adoption rates of online banking services among the younger population.

Theoretical Framework

The theoretical framework adopted in this study was Technology Acceptance Model (TAM) developed by Davis et al., (1989). The theory provided a more comprehensive insight in understanding of technology adoption behaviors. For example, the positive dimensions of technology readiness (optimism and innovativeness) have been found to enhance perceived ease of use and perceived usefulness, which are central to TAM (Kim et al., 2020). Additionally, addressing the negative dimensions (discomfort and insecurity) through user education and system improvements can reduce perceived barriers, thereby fostering a more conducive environment for technology adoption. Overall, the theoretical framework of technology readiness provides critical insights into how psychological predispositions towards technology shape adoption behaviors, emphasizing the importance of targeting both positive and negative attitudes to encourage widespread technology use.

Hypotheses

The following hypotheses were formulated and tested:

- i. There will be a significant relationship between perceived risk and adopting online banking services among undergraduates.
- ii. There will be a significant relationship between technology readiness and adoption of online banking among undergraduates.
- iii. There will be a significant relationship between perceived risk and technology readiness among undergraduates.

Method

Participants

A total of two hundred and fifty students of Nnamdi Azikiwe University, Awka that were selected using purposive sampling technique participated in the study. The participants were selected from the Faculties of Engineering, Management Sciences, Physical Sciences and Social Sciences at various levels (100 to 500 levels). The participants comprised of 118 male

students (47.2%) and 132 female (52.8%). The age range of the participants is 18-36years of age, with a mean age of 21.74 and a standard deviation of 2.04.

Instruments

Three instruments were used to collect data for the present study and they include:

Risk Perception Scale

Risk Perception Scale was developed by Featherman and Pavlou (2003).It measures the extent to which individual believes there is potential for negative outcomes when using online banking services. . It is a six items that is measured by five-point Likert scale ranging from strongly agrees (5) to strongly disagree (1). The participants can respond about the extent to which they agree with each of the statements on the scale. The higher the score, the higher shows high risk perception. It has a test-retest reliability of 0.71 and cronbach alpha of 0.86.

Technology Readiness Scale

Technology Readiness Scale was developed by Celik and Kocaman (2017). It measure the extent to which individual is open to embrace and use new technologies. It is a ten items that is measured by five-point Likert scale ranging from strongly agrees (5) to strongly disagree (1). The participants can respond about the extent to which they agree with each of the statements on the scale. It has a test-retest reliability of 0.81 and cronbach alpha of 0.83.

Online Banking Adoption Scale

Online Banking Adoption Scale was developed by Pikkarainen et al., (2004). It measures the extent to which individual use online banking services for their financial transactions. It is a six items that is measured by five-point Likert scale ranging from strongly agrees (5) to strongly disagree (1). The participants can respond about the extent to which they agree with each of the statements on the scale. It has a test-retest reliability of 0.82 and cronbach alpha of 0.78.

Procedure

Copies of the questionnaire, including a page containing informed consent were administered to the students in the Faculties of Engineering, Management Sciences, Physical Sciences and Social Sciences, Nnamdi Azikiwe University, Awka. These students were conveniently selected in that the researcher administered the copies of the questionnaire to students who were willing, available and ready to participate in the study. Meanwhile, out of 253 copies of questionnaire administered 250 completely filled copies of the questionnaire utilized for the purpose of the study.

Design and Statistics

Correlational design was used for the study because the objective was to establish relationship among study variables and Pearson Moment Product Correlation was used for data analysis

Results

Based on the analysis, the following findings were made.

Table 1: Descriptive Statistics

	gender	age	m.status	percievedrisk	tacceptance	obanking
Valid	250	250	250	250	250	250
Missing	0	0	0	0	0	0
Mean	1.528	21.736	1.036	15.692	31.280	20.320

Table 1: Descriptive Statistics

	gender	age	m.status	percievedrisk	tacceptance	obanking
Std. Deviation	0.500	2.044	0.187	4.419	3.825	5.687
Minimum	1.000	18.000	1.000	6.000	22.000	6.000
Maximum	2.000	36.000	2.000	26.000	42.000	30.000

The table above shows the mean and standard deviation of demographic and main variables of the study. It revealed that participants had a mean score of 15.692 and standard deviation of 4.419 on risk perception, mean score of 31.280 and standard deviation of 3.825 on technology acceptance and mean score of 20.320 and standard deviation of 5.687 on adoption of online banking.

Table 2: Pearson's Correlations Table of Relationships between Perceived Risk, Technology Acceptance and Adoption of Online Banking

Variable		obanking	percievedrisk	tacceptance
1. obanking	Pearson's r	—		
	p-value	—		
2. percievedrisk	Pearson's r	-0.024	—	
	p-value	0.709	—	
3. tacceptance	Pearson's r	0.233	-0.176	—
	p-value	< .001	0.005	—

Table 2 revealed there is no significant relationship between perceived risk and adoption online banking ($r = -.024$, $p > .05$). It also showed a significant positive relationship between technology acceptance and adoption online banking ($r = .233$, $p < .001$). It further revealed that significant relationship exist between perceived risk and technology acceptance ($r = -.176$, $p < .005$).

Discussion

The purpose of the study was to investigate the influence of perceived risk, technology readiness and adoption of online banking among undergraduate students of Nnamdi Azikiwe University, Awka.

The first finding shows that perceived risk, which refers to the potential for financial loss, privacy breaches, or identity theft during online banking, does not have a significant impact on the adoption of these services among students. This finding is consistent with studies that suggest younger generations, particularly university students, may be less deterred by risks associated with online banking due to their familiarity with digital platforms and technologies (Alalwan et al., 2018). Unlike older users who might be more concerned about security issues, undergraduates seem to focus more on the functionality and convenience of the technology

rather than potential risks. This suggests that, despite the presence of perceived risk, it does not directly hinder their adoption of online banking.

The second finding shows a significant positive relationship between technology acceptance and the adoption of online banking. Technology acceptance, which refers to the degree to which users are willing to embrace and utilize new technologies, plays a crucial role in determining whether undergraduates will use online banking services. This finding aligns with the Technology Acceptance Model (TAM), which posits that perceived ease of use and perceived usefulness are key determinants in technology adoption (Davis, 1989). More recent research supports this view, indicating that users who perceive online banking as user-friendly and beneficial are more likely to adopt it (Tseng et al., 2021). For undergraduates, their comfort with digital technologies enhances their readiness to adopt online banking, highlighting the importance of promoting positive experiences with the platform to increase its use.

The third finding reveals a significant relationship between perceived risk and technology acceptance. This suggests that students who perceive higher risks associated with online banking are less likely to accept the technology unless they feel confident in its security and reliability. According to Rahi et al. (2018), perceived risk can negatively influence technology acceptance, as users need to feel assured that the technology is safe before they fully embrace it. In the context of online banking, undergraduates may mitigate their concerns about risks through increased exposure to and familiarity with the platform. Providing robust security features and transparent information about privacy protections could therefore enhance technology acceptance among those who initially perceive online banking as risky.

The study demonstrates that while perceived risk does not significantly impact the adoption of online banking, technology acceptance plays a critical role in determining whether undergraduates will use these services. The significant relationship between perceived risk and technology acceptance further emphasizes the need to address concerns about security and privacy to enhance students' readiness to adopt online banking. Overall, these findings underscore the importance of technology readiness and positive perceptions of online banking platforms in driving adoption among young, digitally-savvy users.

The findings implies that concerns about security, privacy, or financial loss do not act as strong deterrents. This challenges the common assumption that perceived risk is a major barrier to the use of digital financial services. Therefore, efforts to promote online banking to undergraduates may not need to prioritize risk mitigation as much as they do for older or less tech-savvy users. Instead, more focus could be placed on highlighting the ease and convenience of the service.

Secondly, it reinforces the importance of fostering a positive perception of technology among students because when they perceive online banking as easy to use and beneficial, they are much more likely to adopt it. Financial institutions and service providers should focus on enhancing user experience by simplifying the interface, providing clear instructions, and demonstrating the advantages of online banking, such as saving time and providing 24/7 access. This can help increase the likelihood of adoption among younger users who are already inclined to accept new technologies.

Furthermore it can influence students' willingness to accept online banking technology. This means that institutions must ensure that security features are clearly communicated and trusted by users. By building confidence in the technology's safety, they can increase technology acceptance and, in turn, promote higher adoption rates. Overall, the study implies that while perceived risk may not be a primary concern for undergraduates, it is still important to address security concerns to foster greater acceptance of online banking technology.

The study recommends that financial institutions should focus on increasing technology acceptance by improving the user experience of their online banking platforms. Simplifying the interface, making the system more intuitive, and providing clear benefits like time savings and ease of access will encourage more students to use these services. Educational campaigns can also be conducted on campuses to familiarize students with the features and advantages of online banking, helping to boost their technology readiness and willingness to adopt these platforms.

Second, while the study shows that perceived risk does not have a direct effect on the adoption of online banking, addressing any underlying security concerns is still crucial for fostering long-term trust and technology acceptance. Banks should continue to invest in robust security measures and regularly update their users about these protections, ensuring that students feel confident in the safety of their financial data. Providing transparent information about encryption, authentication methods, and privacy safeguards can help alleviate any lingering concerns about perceived risks.

Universities can play a role in supporting students' technology readiness by incorporating digital literacy programs that focus on financial technology, including online banking. These initiatives can enhance students' overall confidence in using digital platforms, not only for banking but for managing other financial transactions as well. By implementing these recommendations, financial institutions and educational bodies can work together to promote greater adoption of online banking among undergraduates, ensuring that this tech-savvy group is well-equipped to take advantage of the convenience and benefits of digital banking services.

The study, while offering valuable insights into the relationship between perceived risk, technology readiness, and the adoption of online banking among undergraduates, has several limitations based on sample size, geographical coverage and age bracket.

It then suggest that future studies should widen the scope of the demographic sample beyond undergraduates to include other groups, such as graduate students, working professionals, or older adults. This would provide a more comprehensive understanding of how different age groups, educational levels, and occupations influence the adoption of online banking and the role of perceived risk. Future researchers should increase sample size and also increase the geographical coverage so as to close the cultural gap in this study.

The findings reveal that perceived risk does not significantly impact the adoption of online banking, suggesting that concerns about security or privacy are not major barriers for this demographic. Instead, technology acceptance plays a pivotal role, as students who view online banking as useful and easy to use are more likely to adopt it. Additionally, while perceived risk does not directly deter adoption, it influences technology acceptance, indicating that efforts to improve students' confidence in the safety and reliability of online banking are important. Overall, the study emphasizes that fostering a positive user experience and addressing security concerns are essential strategies for increasing online banking adoption among young, tech-savvy users. These insights not only contribute to a better understanding of digital banking behaviors but also offer practical recommendations for financial institutions seeking to enhance service uptake among undergraduates.

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