

The dynamics of digital banking adoption: Insights from Iran's context on marketing strategies and personal competence

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Abstract

Purpose: This study investigates the factors affecting customers' digital banking adoption using the Technology Adoption Model (TAM), supplemented by Bank Marketing Activities (BMA) and Bank Personal Competence (BPC).

Research Methodology: A total of 271 participants were analyzed quantitatively using Structural Equation Modeling (SEM) with IBM AMOS 26.

Results: The findings indicate that both Bank Marketing Activities (BMA) and Bank Personal Competence (BPC) play significant roles in augmenting the perceived ease of use and usefulness of digital banking. Specifically, BPC demonstrates greater efficacy in enhancing ease of use, whereas BMA affects both ease of use and usefulness. Key components of effective bank marketing include personnel expertise, proactive service delivery, and the effective handling of customer dissatisfaction. Moreover, essential competencies for bank staff include being responsive, adept at problem solving, and adhering to ethical standards.

Limitations: The applicability of this study's findings is primarily focused on the educational environment.

Contribution: This study expands the theory of technology adoption, particularly within the realm of marketing functions. It offers valuable managerial insights into the prioritization of bank services and the development of personnel competencies aimed at bolstering the adoption of digital banking services.

Keywords: Bank's personal competence, perceived ease of use, perceived usefulness, intention to use digital banking

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1. Introduction

Digital banking constitutes a fundamental aspect of modern banking services, facilitating the transition to online banking platforms, where financial services are delivered via the Internet. The evolution of banking from traditional to digital formats, marked by the transition from Banking 3.0 to Banking 4.0, has necessitated adaptation to platform technologies, enabling transactions to occur seamlessly and conveniently across various locations and times through applications (Sekaran & Bougie, 2016). However, this transformation presents challenges for traditional banks accustomed to adhering to regulatory standards, requiring substantial investments, and risking revenue losses. Digital technologies offer opportunities to reduce operating costs, streamline processes, and enhance efficiency (Zahedi, Abbasi, & Khanachah, 2020).

Indonesia's digital banking landscape has witnessed significant growth with consumers increasingly embracing digital channels. McKinsey surveys indicate rapid growth in digital banking users over the past few years, highlighting the value and loyalty digitally active customers bring to banks (Jafari,

Zahedi, & Naghdi Khanachah, 2023a; Sekaran & Bougie, 2016). Despite this growth, the shift from traditional banking to digital platforms entails considerable switching costs, which impede the pace of digital transformation. Geographical and cultural factors coupled with customer reluctance to adopt digital banking pose additional barriers.

The tardiness in Indonesia's digital banking transformation, compared to neighboring countries such as Malaysia and Singapore, underscores the need for concerted efforts to bridge this gap (Priansa, 2017). While some banks have begun investing in technology, challenges persist in overcoming traditional banking preferences and enhancing digital literacy among customers (R. Zahedi & Khanachah, 2020a). Research indicates a global phenomenon of customer reluctance to embrace digital banking, necessitating a deeper understanding of its determinants.

This study addresses the gap in existing research by integrating the Technology Acceptance Model (TAM) with bank marketing activities and personnel competence (Park, Kim, & Kwon, 2016). By examining perceived ease of use and perceived usefulness as key determinants of digital banking adoption, the study seeks to elucidate the role of marketing activities and personnel competence in influencing adoption intentions (Jafari, Zahedi, & Naghdi Khanachah, 2023b). Understanding the interplay between these factors can offer valuable insights for bank managers, guiding marketing strategies, and personnel training initiatives to facilitate digital banking adoption (Sugiyono 2018). Through this research, we aim to contribute to the advancement of knowledge on digital banking adoption and offer practical recommendations for enhancing adoption rates in the banking industry.

2. Literature Review

This study investigates the relationship between Perceived Usefulness and Perceived Ease of Use variables and the intention to adopt digital banking, considering the indirect influence of independent variables from marketing activities and personal competence in banking, as per the Technology Acceptance Model (TAM) theory.

2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) stands as a foundational framework in the realm of technology adoption, widely acknowledged for its reliability in predicting human behavior toward technology (Jafari et al., 2023a; Sprenger & Schwaninger, 2021; M. R. Zahedi & Khanachah, 2020b). Developed initially by Davis in the late 1980s, the TAM was designed to elucidate the factors influencing individuals' acceptance and utilization of technology within organizational settings (Alberton et al., 2020). Over the years, TAM has evolved through various iterations and adaptations to accommodate the changing landscape of technology and user behavior (Akhter et al., 2020).

TAM posits that an individual's intention to use a particular technology is primarily determined by two key factors: perceived usefulness and perceived ease of use (Andriani & Putra, 2019; Davis, 1989; Henseler, Ringle, & Sarstedt, 2015). Perceived usefulness refers to the extent to which an individual believes that adopting a technology will enhance their performance or facilitate achieving specific goals, while perceived ease of use refers to the degree to which an individual perceives the technology as effortless to use (M. R. Zahedi & Khanachah, 2020a). According to TAM, these perceptions directly influence an individual's attitude toward using the technology, which subsequently impacts their actual usage behavior.

The TAM has undergone several refinements and extensions since its inception to enhance its explanatory power and applicability across diverse contexts. TAM2, introduced by Venkatesh and Davis (2000), incorporates additional constructs such as subjective norms and images to better capture the social influences and psychological factors influencing technology acceptance (Venkatesh & Davis, 2000). Subsequent iterations, including TAM3 and the Unified Theory of Acceptance and Use of Technology (UTAUT), have further expanded TAM's scope to encompass factors such as hedonic motivation, habit, and facilitating conditions, reflecting the multifaceted nature of technology adoption (Venkatesh & Bala, 2008; Venkatesh, Morris, Davis, & Davis, 2003).

The applicability of the TAM extends beyond organizational settings to various domains, including but not limited to e-commerce, social media, healthcare, and education (Hair, Hult, Ringle, & Sarstedt, 2016; Tanha et al., 2024). Researchers have conducted numerous literature reviews and meta-analyses to assess TAM's validity and effectiveness across these domains (Granić & Marangunić, 2019; Ingham, Cadieux, & Berrada, 2015; Šumak, Heričko, Budimac, & Pušnik, 2017; Wirtz & Göttel, 2016). These studies have consistently demonstrated the robustness of TAM in explaining and predicting technology acceptance behaviors across different cultural, geographical, and socioeconomic contexts (Katahama & Bozorgzadeh, 2023).

In recent years, with the proliferation of innovative technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT), the TAM has remained relevant as a guiding framework for understanding users' intentions and behaviors toward adopting these technologies (. R. Zahedi & Khanachah, 2020b). For instance, in the context of digital banking systems, TAM can provide valuable insights into customers' perceptions of security, convenience, and utility, which are crucial factors influencing their adoption decisions (Lai, 2017). By leveraging TAM, organizations can design more user-centric technologies and implement targeted interventions to promote adoption and enhance user satisfaction (Rivaldi, 2018).

The Technology Acceptance Model (TAM) serves as a cornerstone in the study of technology adoption, offering a comprehensive framework for understanding the complex interplay between individuals' perceptions, attitudes, and actual usage behaviors. As technology continues to advance and permeate every aspect of our lives, the TAM remains a valuable tool for researchers, practitioners, and policymakers alike, enabling them to navigate the ever-changing landscape of technological innovation and adoption.

2.2 Intention to Adopt Digital Banking

The advent of digital banking ushered in a new era of convenience and accessibility in the contemporary landscape of financial services. However, despite its potential benefits, the widespread adoption of digital banking services faces several obstacles rooted in both demand-side factors and public perception (Alkhowaiter, 2020; M. R. Zahedi, Naghdi Khanachah, & Papoli, 2023).

To effectively navigate these challenges and seize market opportunities, financial institutions must delve into the intricacies of consumer attitudes toward digital banking services (Al-Alak, 2014; Hsu & Lin, 2016). This necessitates a comprehensive understanding of the factors influencing individuals' intention to adopt digital banking (Jafari & Khanachah, 2024; Tun-Pin et al., 2019; Widjaja, Arifin, & Setini, 2020; M. Zahedi, Akhavan, & Naghdi Khanachah, 2022).

One pivotal aspect of assessing the adoption of digital banking is the level of support for technology adoption among potential users. This encompasses various dimensions, including individuals' perceived usefulness and ease of use of digital banking platforms (Safira & Baridwan, 2018). Perceived usefulness refers to the extent to which individuals believe that utilizing digital banking services enhances their financial management practices, streamlines transactions, or provides value-added features. Perceived ease of use, on the other hand, relates to individuals' perceptions of the simplicity and user-friendliness of digital banking interfaces and functionalities (Darko, Bans-Akutey, Amoako, & Affum, 2024). These factors, as posited by the Technology Acceptance Model (TAM) and its extensions, significantly influence individuals' attitudes and intentions toward adopting digital banking (HC, Hanafi, & Lantara, 2019).

Moreover, trust in information has emerged as a critical determinant of consumers' inclination toward digital banking adoption. Trust encompasses various dimensions, including perceived security, reliability, privacy, and integrity of digital banking systems and processes (Sekaran & Bougie, 2016). Individuals are more likely to embrace digital banking services when they perceive these platforms as trustworthy and secure media for conducting financial transactions and managing their assets (Indrajaya et al., 2023).

Beyond individual-level factors, sociocultural influences and institutional trust also play pivotal roles in shaping the intention to adopt digital banking (M. R. Zahedi & Khanachah, 2020a). Sociocultural factors encompass societal norms, peer influence, and cultural attitudes toward technology adoption and financial management practices (Singh & Srivastava, 2018). Institutional trust refers to individuals' confidence in financial institutions' ability to safeguard their interests, protect their assets, and uphold ethical standards in delivering digital banking services (Indrajaya et al., 2023).

In conclusion, understanding the multifaceted nature of the intention to adopt digital banking requires a nuanced examination of individual perceptions, sociocultural dynamics, and institutional trust (Sugiyono, 2018). By elucidating these factors, financial institutions can develop targeted strategies to overcome barriers to adoption, foster trust among consumers, and capitalize on the vast potential offered by digital banking services in today's digital economy.

2.3 Bank Marketing Activities and Bank Personal Competence

In the dynamic banking landscape, effective marketing strategies are indispensable tools for fostering customer engagement, building brand equity, and driving sustainable growth (Abedin et al. 2016). Bank marketing activities encompass a diverse array of techniques and initiatives aimed at creating customer value, enhancing brand visibility, and cultivating profitable relationships with clients (Safira and Baridwan 2018).

Sales promotion techniques represent a facet of bank marketing endeavors, encompassing a spectrum of promotional activities designed to stimulate consumer interest and drive short-term sales (Belch & Belch, 2018). These may include limited-time offers, discounts, loyalty programs, and reward schemes aimed at incentivizing customers to engage with banking products and services (Deddy, 2019).

Event marketing has emerged as an integral component of bank marketing strategies, involving the strategic planning and execution of events, both physical and virtual, to engage customers, showcase bank offerings, and strengthen brand affinity (Ghozali & Latan, 2015). These events range from seminars, workshops, and webinars to community outreach programs and sponsorship of industry conferences, all of which aim to enhance brand visibility and foster meaningful connections with customers (Ghorbani and Khanachah, 2020).

Public relations (PR) activities represent a critical aspect of bank marketing, encompassing efforts to manage and shape a bank's public image, reputation, and perception (Fahmi & Rohman, 2018). This includes media relations, crisis communication, corporate social responsibility initiatives, and community engagement efforts aimed at building trust, credibility, and goodwill among stakeholders. Personal selling remains a cornerstone of bank marketing, involving one-on-one interactions between bank representatives and potential customers to understand their needs, educate them about available products and services, and guide them through the decision-making process (Rahimi, Møller, & Hvam, 2016). This personalized approach enables banks to tailor their offerings to meet individual customer needs, address concerns, and build lasting relationships based on trust and rapport (Hsu and Lin, 2016). In addition to marketing activities, the competence and expertise of bank personnel plays a pivotal role in shaping customer experiences and perceptions (Kitkuakul, 2018; Saibil, 2020). Bank personnel, including frontline staff, relationship managers, and financial advisors, serve the face of the bank, embodying its values, ethos, and commitment to customer service excellence (M. R. Zahedi & Khanachah, 2020a).

The competence of bank personnel extends beyond technical expertise to encompass interpersonal skills, communication abilities, and emotional intelligence (Reilly 2018). Effective communication, active listening, empathy, and problem-solving skills are essential competencies that enable bank personnel to understand customer needs, address concerns, and provide tailored solutions that align with financial goals and aspirations.

Furthermore, ongoing training, development programs, and performance management initiatives are essential for nurturing and enhancing the competence of bank personnel (Law, Hafiz, Kwong, & Wong,

2020). These initiatives empower employees to stay abreast of industry trends, regulatory changes, and technological advancements, enabling them to deliver superior customer service and drive positive outcomes for both banks and their clients.

Bank marketing activities and competence of bank personnel are intrinsically linked, serving as key drivers of customer satisfaction, loyalty, and business success (Darma & Noviana, 2020). By implementing effective marketing strategies and investing in the development of personnel competence, banks can differentiate themselves in a competitive market landscape, build enduring customer relationships, and achieve long-term sustainable growth and profitability in the long run.

2.4 Perceived Ease of Use and Perceived Usefulness

The Technology Acceptance Model (TAM), a seminal framework in the realm of technology adoption, places significant emphasis on two key constructs: perceived ease of use and perceived usefulness (Durodolu & Ngoaketsi, 2019). These constructs, which are integral to individuals' decision-making processes regarding technology adoption, offer valuable insights into the factors influencing user behavior and attitudes toward technology.

Perceived ease of use refers to users' subjective perceptions regarding the ease and simplicity of interacting with a particular technology (Muñoz-Leiva, Climent-Climent, & Liébana-Cabanillas, 2017). It encompasses factors such as the intuitiveness of the user interface, clarity of instructions, and overall user experience associated with the technology (Kalachev & Mezin, 2020). Individuals are more likely to adopt a technology if they perceive it to be easy to understand, navigate, and operate, as this reduces cognitive effort and enhances usability (Tyas & Darma, 2017).

Furthermore, perceived ease of use extends beyond mere usability to encompass factors such as perceived learnability and adaptability (Khairi and Baridwan 2015). Users are more inclined to embrace technologies that facilitate quick learning curves and seamless integration into their existing workflows or daily routines (Mashizha, Gumbo, & Sabawo, 2024). Thus, technologies offering user-friendly features, clear feedback mechanisms, and intuitive design elements tend to garner higher levels of acceptance and usage among users.

By contrast, perceived usefulness reflects users' perceptions of the tangible benefits and value derived from utilizing a particular technology (Tamim & Akter, 2024). It encompasses considerations such as the extent to which the technology enhances efficiency, productivity, and task performance, as well as its potential to fulfill users' specific needs or goals (Marneros, Papageorgiou, & Efstathiades, 2020). Individuals are more likely to adopt technology if they perceive it as instrumental in achieving desired outcomes or addressing pressing challenges in their personal or professional lives.

Moreover, perceived usefulness is inherently linked to users' expectations regarding the utility and relevance of the technology in addressing their unique circumstances or requirements (Naruetharadhol et al., 2021). Technologies that offer tangible benefits, solve practical problems, or fulfill unmet needs are more likely to be perceived as useful and consequently gain widespread acceptance and adoption among users (Makanyeza & Chikazhe, 2017).

The interplay between perceived ease of use and perceived usefulness is central to Technology Acceptance Model, as these constructs collectively shape users' attitudes and intentions toward adopting new technologies. A technology perceived as both easy to use and useful is more likely to elicit positive attitudes and intentions among users, leading to higher levels of adoption and usage over time (Khaldi, 2017).

Perceived ease of use and usefulness are fundamental constructs that influence users' decisions regarding technology adoption. By understanding these constructs and incorporating them into the design and implementation of new technologies, organizations can enhance user acceptance, foster engagement, and drive successful technology adoption initiatives in today's rapidly evolving digital landscape.

2.5 Hypothesis Development

2.5.1 The Effects of Bank Marketing Activities on Perceived Ease of Use and Perceived Usefulness

Bank marketing activities are expected to positively influence perceived ease of use and usefulness, thereby enhancing consumers' perceptions of digital banking services (Abedin et al., 2016; Styarini & Riptiono, 2020).

H1: Bank marketing activities have a positive relationship with perceived ease of use.

H2: Bank marketing activities are positively related with perceived usefulness.

2.5.2 The Effects of Bank Personal Competence on Perceived Usefulness and Perceived Ease of Use

Bank personnel competence is anticipated to positively affect perceived usefulness and ease of use, as competent staff can enhance consumers' perceptions of service quality (Micic, 2015; Rahayu, 2016).

H3: Banks' personal competence has a positive relationship with perceived usefulness.

H4: Bank personal competence has a positive relationship with perceived ease of use.

2.5.3 Perceived Ease of Use and Perceived Usefulness

Perceived ease of use is expected to positively influence perceived usefulness, as users' comfort with technology facilitates their perception of its benefits (Nugraha, Kaniawati, Rusdiana, & Kirana, 2016).

H5: Perceived ease of use has a positive relationship with perceived usefulness.

2.5.4 Perceived Ease of Use, Perceived Usefulness, and Intention to Adopt Digital Banking

Both perceived ease of use and perceived usefulness are anticipated to positively influence the intention to adopt digital banking, as they contribute to users' favorable attitudes toward the technology (Micic, 2015; Shah, Rashid, & Khaleequzzaman, 2014).

H6: Perceived ease of use has a positive relationship with the intention to adopt digital banking.

H7: Perceived usefulness has a positive relationship with intention to adopt digital banking.

2.5.5 Bank Marketing Activities, Bank Personal Competence on Intention, and Intention to Adopt Digital Banking

Bank marketing activities and personal competence are expected to positively influence the intention to adopt digital banking, reflecting the importance of effective marketing strategies and competent staff in driving customer adoption (Acar et al. 2017; Teece 2018).

H8: Bank marketing activities have a positive relationship with intention to adopt digital banking.

H9: Bank personal competence has a positive relationship with the intention to adopt digital banking.

3. Methodology

In this section, the research design is elaborated upon, followed by an explanation of the data collection procedure, a discussion on the determination and validation of the survey instrument, and finally, an explanation of the statistical approach employed in this study.

3.1 Research Design

The research design is rooted in a post-positivism paradigm chosen for its capacity to elucidate phenomena involving human interactions. A quantitative methodology was adopted to mitigate bias and ensure rigorous statistical analysis. Structural equation Modeling (SEM) was employed as the primary analytical tool, offering a superior model fit compared to traditional regression methods. Specifically, Variant-Based Structural Equation Modeling utilizing Partial Least Squares (PLS) was employed, leveraging reflective-reflective measurement models within a hierarchical component design.

3.2 Data Collection Procedure

Data collection involved administering questionnaires to Indonesian banking customers, utilizing both online platforms and manual surveys. Non-probability sampling techniques were employed to select respondents with characteristics aligned with the research objectives. A total of 225 samples were targeted to ensure a robust ratio of 10:1 between the samples and indicators. The questionnaire employed Likert-scale questions and interval measurement scales to gauge respondents' attitudes.

3.3 Measurements and Validation

The questionnaire encompassed constructs such as bank marketing activities, bank personal competence, perceived ease of use, and perceived usefulness, with items adapted from the established literature. Validity was assessed using the AMOS program, with indicators deemed valid if they exhibited loading factors of > 0.5 . Reliability was gauged using Cronbach's alpha, with coefficients > 0.7 indicative high reliability. Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio of Correlations method to ensure the distinctiveness of each construct.

3.4 Analytic Strategy

Following data collection, the analysis began with normality assumption testing, outlier identification, and convergent validity assessment. Discriminant validity was then evaluated using the HMT Inference. Reliability was verified using construct reliability values, and model feasibility was tested against predefined criteria, such as significance probability, goodness-of-fit indices, and root mean square error of approximation. Parameter significance and hypothesis testing were subsequently conducted to ascertain the robustness of the model.

It is hypothesized that both bank marketing activities and personal competence positively influence users' intentions to adopt digital banking. Effective marketing strategies and competent banking professionals are expected to enhance users' perceptions of digital banking platforms, thereby fostering stronger intentions to adopt these platforms to meet their banking needs.

4. Result and discussions

Following the Convergent Validity Test, all question items used to measure the variables surpassed the criterion of > 0.5 , indicating their efficacy in measuring the intended constructs. Additionally, the analysis proceeded to evaluate the Average Variance Extracted (AVE) value, which also exceeded the threshold of 0.50, affirming the appropriateness of the variable measurement. Discriminant validity was assessed by examining the correlation values between constructs in the model. The results revealed that all confidence interval (CI) values were below or equal to 1.00, indicating acceptable validity for the question items based on the discriminant validity criteria.

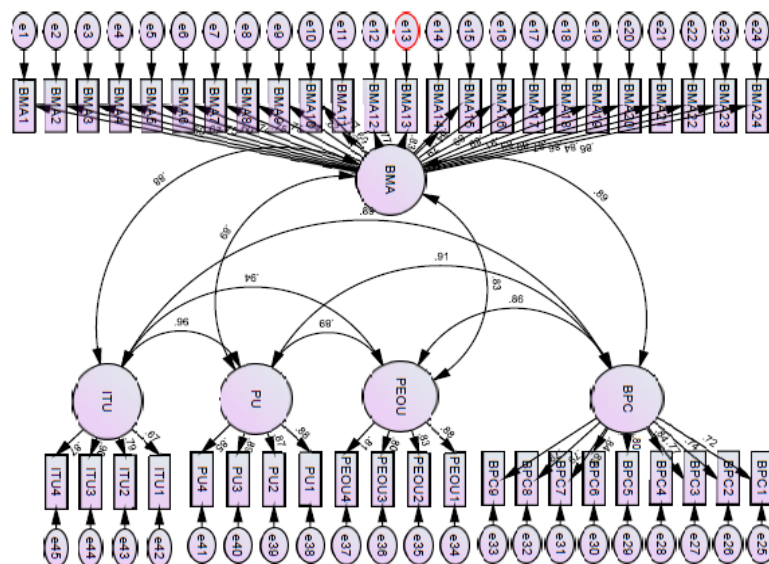


Figure 1. Research Model

According to the results of the Reliability Test calculations, none of the construct reliability values were below 0.7. This indicates the reliability and viability of all the constructs utilized in the study. Prior to testing the proposed hypotheses, a comprehensive analysis of the structural equation model was

conducted to assess goodness of fit. To determine the adequacy of the constructed model, a model suitability test, also known as the goodness-of-fit test, was performed.

Table 1. Coefficient of Determination and Predictive Relevance Tests

Goodness of fit index	Cut off value	Nilai	Evaluation
<i>Significance Probability</i>	$\geq 0,05$	0.058	Good Fit
CMIN/DF	≤ 2.00	1.825	Good Fit
GFI	≥ 0.90	0.913	Good Fit
AGFI	≥ 0.90	0.901	Good Fit
TLI	≥ 0.95	0.948	Marginal Fit
CFI	≥ 0.95	0.961	Good Fit
RMSEA	≤ 0.08	0.073	Good Fit

In Table 1, it is evident that probability values greater than 0.05 indicate a good fit of the model to the empirical data. This conclusion is further supported by other fit criteria such as RMSEA ($0.073 < 0.08$), GFI ($0.913 > 0.90$), AGFI ($0.901 > 0.90$), TLI ($0.948 < 0.90$), and CFI ($0.961 > 0.90$). Hence, the structural model employed as an analytical tool in this study satisfied the criteria for goodness of fit.

Following the significance test of the parameters, the next step involves determining the extent to which the latent variables explain the indicator variables. Based on the Squared Multiple Correlation (R^2) test, the R-Square (R^2) value or coefficient of determination of the ITU construct was 0.935. These findings suggest that 93% of the variance in the endogenous variable can be explained by exogenous variables, whereas the remaining variance is accounted for by other exogenous variables.

Moreover, the coefficient of determination of the PU construct is 0.880, indicating that 88% of the variance in the endogenous variable can be explained by exogenous variables, with the remainder explained by other exogenous variables outside the scope of this study. Similarly, the coefficient of determination of the PEOU construct is 0.643, implying that 64% of the variance in the endogenous variable can be explained by exogenous variables, while the rest is explained by other exogenous variables.

Further analysis reveals that Bank Marketing Activities have a positive effect on both Perceived Ease Of Use ($\beta = 0.466$, $CR > 1.96$, $p < 0.05$) and Perceived Usefulness ($\beta = 0.445$, $CR > 1.96$, $p < 0.05$). Similarly, banks' personal competence positively influenced Perceived Usefulness ($\beta = 0.291$, $CR > 1.96$, $p < 0.05$) and Perceived Ease of Use ($\beta = 0.545$, $CR > 1.96$, $p < 0.05$). Additionally, Perceived Ease of Use positively affected Perceived Usefulness ($\beta = 0.422$, $CR > 1.96$, $p < 0.05$), while both Perceived Ease of Use ($\beta = 0.316$, $CR > 1.96$, $p < 0.05$) and Perceived Usefulness ($\beta = 0.554$, $CR > 1.96$, $p < 0.05$) positively influenced the Intention To Adopt Digital Banking.

Table 2. Hypotheses Testing

	Estimate	S.E.	C.R.	P	Label
PEOU <--- BMA	.466	.077	6.081	***	
PEOU <--- BPC	.545	.059	9.304	***	
PU <--- BMA	.445	.078	5.731	***	

			Estimate	S.E.	C.R.	P	Label
PU	<---	BPC	.291	.062	4.707	***	
PU	<---	PEOU	.422	.087	4.854	***	
ITU	<---	BMA	-.037	.087	-.423	.672	
ITU	<---	BPC	-.047	.067	-.702	.483	
ITU	<---	PEOU	.316	.108	2.935	.003	
ITU	<---	PU	.554	.179	3.089	.002	

There is no evidence of a direct relationship between Bank Marketing Activities and Intention To Adopt Digital Banking. These findings indicate that hypothesis eight is rejected. Nevertheless, this study seeks to investigate the indirect relationship between Bank Marketing Activities and Intention To Adopt Digital Banking through Perceived Ease of Use and Perceived Usefulness. The changes in the estimated value of the indirect influence path coefficient in this model were further analyzed using the total effects method as follows:

$$\text{Total Effects} = \frac{(a*b)}{(a*b)+c}$$

$$\text{Total Effects} = \frac{(0.466*0.316)}{(0.466*0.316) + (-0.037)}$$

$$\text{Total Effects} = \frac{(0.466*0.316)}{(0.466*0.316) + (-0.037)}$$

$$\text{Total Effects} = 1.336 \text{ (133.6\% or full mediation)}$$

Based on the calculation of the total effects with the indirect relationship between bank marketing activities and intention to adopt digital technology through perceived ease of use, it was found to mediate fully with a magnitude of 133.6% (Full).

$$\text{Total Effects} = \frac{(a*b)}{(a*b)+c}$$

$$\text{Total Effects} = \frac{(0.445*0.554)}{(0.445*0.554) + (-0.037)}$$

$$\text{Total Effects} = \frac{0.246}{0.209}$$

$$\text{Total Effects} = 1.177 \text{ (117.7\% or full mediation)}$$

According to the calculation of total effects, the indirect relationship between Bank Marketing Activities and Intention To Adopt Digital Banking through Perceived Usefulness fully mediates, with a magnitude of 117.7% (full).

Considering all the calculations above, it is evident that Bank Marketing Activities can influence the Intention to Adopt Digital Banking, if mediated by Perceived Ease of Use and Perceived Usefulness. There is no discernible influence between banks' personal competence and the intention to adopt digital banking. These findings indicate that hypothesis nine is rejected. Nonetheless, the researcher endeavors to explore the indirect relationship between banks' personal competence and the intention to adopt digital banking through perceived ease of use and perceived usefulness. The estimated changes in the value of the indirect influence path coefficient in this model were further analyzed using the total effects method.

$$\text{Total Effects} = \frac{(a*b)}{(a*b)+c}$$

$$\text{Total Effects} = \frac{(0.545*0.116)}{(0.545*0.116) + (-0.047)}$$

$$\text{Total Effects} = \frac{0.063}{0.016}$$

$$\text{Total Effects} = 3.937 \text{ (393.7\% or full mediation)}$$

Based on the calculation of the total effects with the indirect relationship between bank personal competence and intention to adopt digital technology through perceived ease of use, it was found to mediate fully with a magnitude of 393.7% (Full).

$$\text{Total Effects} = \frac{(a*b)}{(a*b)+c}$$

$$\text{Total Effects} = \frac{(0.291*0.554)}{(0.291*0.554) + (-0.047)}$$

$$\text{Total Effects} = \frac{0.161}{0.114}$$

$$\text{Total Effects} = 1.412 \text{ (141.2\% or full mediation)}$$

Based on the calculation of the total effects with the indirect relationship between bank personal competence and intention to adopt digital technology through perceived usefulness, it was found to mediate fully with a magnitude of 141.2% (Full). Based on all the calculations above, it was found that Bank Personal Competence will be able to influence the Intention to Adopt Digital Banking if mediated by Perceived Ease of Use and Perceived Usefulness.

5. Conclusion

The findings of this study indicate that Bank Marketing Activities exert a positive and significant influence on perceived ease of use and usefulness. Similarly, Bank Personnel Competence has a positive and significant impact on perceived ease of use and usefulness. Moreover, Perceived Ease of Use had a positive and significant effect on Perceived Usefulness. Furthermore, both Perceived Ease of Use and Perceived Usefulness demonstrated a positive and significant impact on the Intention To Adopt Digital Banking. However, bank marketing activities and personal competence show no significant effect on the Intention To Adopt Digital Banking.

The researcher recommends that companies in the finance sector focus on enhancing Bank Marketing Activities, particularly emphasizing statements such as "A bank employee is knowledgeable about clients' needs," indicating respondents' disagreement with the understanding of bank employees' consumer needs. It is anticipated that the Intention to Adopt Digital Banking will increase by improving these factors. Similarly, attention should be given to banks' personal competence, especially the statement "A bank employee is able to demonstrate creativity in improving service quality," indicating respondents' disagreement with the improvement of service quality by bank employees. Enhancing these factors are expected to boost the Intention to Adopt Digital Banking.

Additionally, emphasis should be placed on the Perceived Ease of Use factor, specifically addressing the statement "Overall, the digital banking application is easy to use," reflecting respondents' disagreement with the overall ease of use of the application. Improving these factors is anticipated to positively affect the Intention to Adopt Digital Banking.

5.1 Competing interests disclaimer

The authors declare no competing interests involved in this research. The products utilized in this study are widely used and prevalent in our research area and country. There is no conflict of interest between the authors and producers of these products, as they are solely intended for the advancement of

knowledge and not for any litigation purposes. Furthermore, the research was not funded by any producing company; rather, it was supported by the authors' personal efforts.

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