

A CONCEPTUAL MODEL OF DIGITAL BANKING ADOPTION INTENTION IN MALAYSIA: INTEGRATING TAM AND TPB

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Abstract: *The rapid advancement of financial technology has transformed the global banking landscape, leading to the emergence of digital-only banking services and platform-based financial ecosystems (Barroso & Laborda, 2022; Verhoef et al., 2021). In Malaysia, despite strong regulatory support and high digital infrastructure readiness, consumer adoption of digital banking remains uneven (Bank Negara Malaysia, 2022). This conceptual paper aims to develop an integrated theoretical framework to explain behavioural intention to adopt digital banking services by synthesising the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB) (Ajzen, 1991). The proposed framework incorporates perceived ease of use, perceived usefulness, trust and subjective norm. By integrating technological, psychological, and social determinants, this study advances fintech adoption literature and offers a comprehensive perspective on digital banking adoption in emerging economies.*

Keywords: *Digital banking, fintech adoption, Technology Acceptance Model, Theory of Planned Behavior, trust, attitude*

Introduction

The financial services sector has undergone unprecedented transformation driven by digital innovation, changing consumer behaviour, and regulatory reforms (Verhoef et al., 2021). In Malaysia, the introduction of digital banking licences and national digital economy initiatives such as MyDIGITAL represent strategic efforts to accelerate fintech development and financial inclusion (Mohsin et al., 2022).

Despite these institutional and infrastructural developments, consumer adoption of digital banking services remains inconsistent across demographic segments (Hoo et al., 2024). While younger and urban users demonstrate higher acceptance, concerns related to security, usability, and institutional trust continue to discourage widespread adoption (Rahman et al., 2024). This gap between technological readiness and behavioural acceptance highlights the need to examine psychological and social drivers of adoption behaviour.

Previous studies on digital banking adoption have largely relied on single-theory perspectives such as TAM or TPB. Although these models provide strong explanatory foundations, their isolated application limits the ability to capture the complexity of fintech adoption behaviour (Souiden et al., 2021). Therefore, an integrated framework combining technological and behavioural perspectives is required.

This study proposes an integrated TAM–TPB conceptual framework to explain Malaysian consumers' intention to adopt digital banking services by incorporating perceived ease of use, perceived usefulness, trust, subjective norm, personal innovativeness, and attitude (Irimia-Diéguez et al., 2023). The proposed framework offers theoretical advancement and practical guidance for fintech stakeholders.

Literature Review

Digital Banking Adoption in Emerging Economies

Digital banking adoption in emerging economies is influenced by infrastructure readiness, digital literacy, regulatory frameworks, and socio-cultural factors (Neves et al., 2023). In Malaysia, high smartphone penetration and increasing internet accessibility have facilitated digital financial inclusion, yet adoption disparities remain evident (Bank Negara Malaysia, 2022).

Studies suggest that convenience alone is insufficient to ensure sustained usage, as long-term adoption depends on perceived value, trust, and service reliability (Nguyen & Dao, 2024). Furthermore, the COVID-19 pandemic accelerated digital transaction behaviour, but post-pandemic sustainability requires stronger behavioural engagement mechanisms (Windasari et al., 2022).

Technology Acceptance Model

The Technology Acceptance Model posits perceived ease of use and perceived usefulness as key predictors of technology acceptance (Venkatesh & Davis, 2000). In digital banking contexts, ease of use reflects interface simplicity and navigation efficiency, while usefulness captures transaction speed, service accessibility, and financial management effectiveness (Ling et al., 2016).

Meta-analytical evidence confirms the strong predictive power of TAM constructs across digital platforms (Granić & Marangunić, 2019). However, TAM has been criticised for its limited contextual sensitivity, particularly in high-risk financial environments where trust and perceived risk play critical roles (Souiden et al., 2021).

Therefore, extending TAM by incorporating contextual and psychological factors is essential to enhance its applicability in digital banking environments. Integrating constructs such as perceived trust, security assurance, and privacy protection can provide a more comprehensive explanation of users' behavioural intentions, particularly in contexts where financial risk and data vulnerability are salient concerns. Such an extended model allows researchers and practitioners to better capture the complexity of user decision-making processes and to design digital banking systems that not only emphasise functional efficiency but also foster user confidence and long-term engagement. This holistic approach strengthens the predictive validity of TAM and supports more effective digital transformation strategies within the financial services sector (Souiden et al., 2021).

Theory of Planned Behavior

The Theory of Planned Behavior extends behavioural analysis by incorporating subjective norm as determinants of intention (Ajzen, 1991). In collectivist societies such as Malaysia, subjective norm plays a significant role, as individuals are strongly influenced by family, peers, and social networks (Wahidudin et al., 2023). Integrating TPB constructs enables a more socially grounded understanding of digital banking adoption behaviour.

In addition, the inclusion of subjective norm within the TPB framework enhances the explanatory power of digital banking adoption models by capturing social pressure and normative expectations that shape individual decision-making. When influential referent groups such as family members, colleagues, and community leaders endorse the use of digital banking platforms, users are more likely to perceive these technologies as socially acceptable and trustworthy. This social endorsement effect not only strengthens behavioural intention but also reduces perceived uncertainty associated with financial technologies, particularly among late adopters and risk-averse users. Consequently, incorporating TPB provides a more holistic perspective that accounts for both individual cognitive evaluations and the broader social environment influencing digital banking usage (Venkatesh et al., 2012).

Trust in Digital Banking Adoption

Trust is widely recognised as a central determinant of digital banking adoption due to concerns related to cybersecurity, privacy breaches, and online fraud (Rahman et al., 2024). Trust enhances platform credibility and reduces uncertainty, thereby strengthening user confidence (Ramos et al., 2018).

Empirical studies consistently demonstrate that trust positively influences both attitude and behavioural intention in fintech adoption (Zhao et al., 2024). In newly established digital banking ecosystems such as Malaysia's, trust becomes particularly important in encouraging first-time adoption and long-term engagement (Jafri et al., 2024).

Moreover, institutional trust and regulatory assurance further reinforce user perceptions of safety and reliability in digital banking platforms. Clear data protection policies, transparent transaction procedures, and strong regulatory oversight by financial authorities can significantly enhance consumers' trust levels. When users perceive that digital banking services are

supported by robust governance frameworks and effective risk management mechanisms, they are more likely to adopt and continue using these platforms. This highlights the importance of collaboration between financial institutions and regulators in building a trustworthy digital financial ecosystem that promotes sustainable adoption and user loyalty (Rahman et al., 2024).

Research Gaps

Despite extensive fintech adoption literature, several gaps remain. First, many studies rely on fragmented theoretical models without integrating technological and behavioural perspectives (Souiden et al., 2021). Second, the mediating role of attitude remains under-theorised in digital banking contexts (Irimia-Diéguez et al., 2023). Third, limited conceptual research explicitly contextualises digital banking adoption within Malaysia's regulatory and socio-cultural environment (Hoo et al., 2024).

These limitations justify the development of an integrated TAM–TPB framework tailored to Malaysian digital banking adoption.

Hypotheses Development

Perceived ease of use significantly influences intention toward digital banking platforms by reducing cognitive effort and increasing perceived convenience (Davis, 1989).

H1: Perceived ease of use positively influences consumers' intention toward using digital banking services.

Perceived usefulness strengthens adoption intention by improving task efficiency and financial management performance (Venkatesh & Davis, 2000).

H2: Perceived usefulness positively influences consumers' intention toward using digital banking services.

Trust enhances psychological security and reduces perceived risk in digital financial transactions (McKnight et al., 2002).

H3: Perceived trust positively influences consumers' intention toward using digital banking services.

Subjective norm encourages adoption behaviour through social validation and peer endorsement (Ajzen, 1991).

H4: Subjective norm positively influences consumers' intention toward using digital banking services.

Conceptual Framework

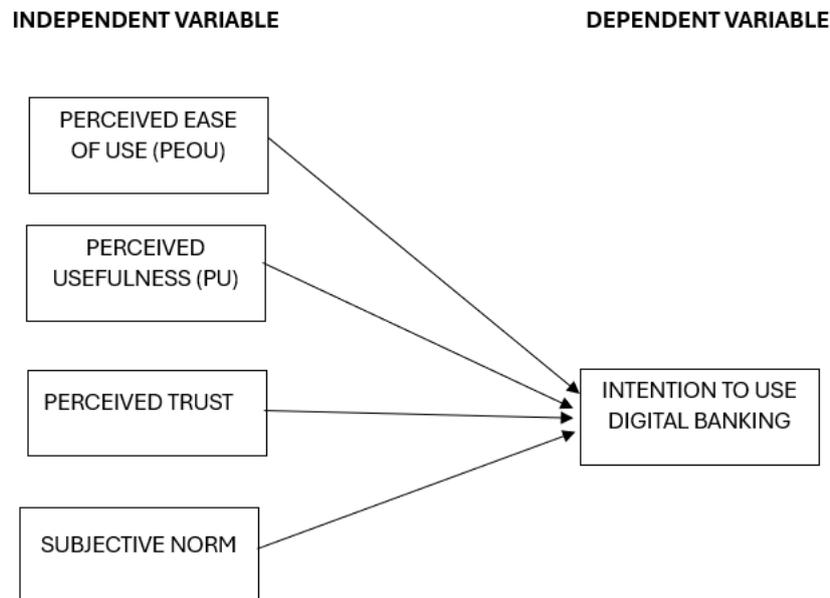


Figure 1: Research Framework

The framework focuses on factors influencing the intention to use digital banking, with multiple independent variables affecting this dependent variable. The key elements in this framework are subjective norm, Perceived Trust, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). These variables are commonly studied in the Technology Acceptance Model (TAM) and related behavioural theories.

Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) jointly shape favourable intention by enhancing perceived performance benefits and reducing usage complexity. When users perceive digital banking platforms as efficient, reliable, and effortless to operate, they are more likely to develop positive affective responses, which subsequently strengthen their intention to adopt and continuously use these services.

Furthermore, the inclusion of Perceived Trust and Subjective Norm extends the explanatory power of the model beyond traditional usability-focused constructs. Perceived Trust addresses concerns related to security, privacy, and transaction reliability, which are critical determinants in financial technology adoption. Subjective Norm captures the influence of social pressure and peer recommendations, reflecting the role of social validation in shaping adoption decisions. From a practical perspective, the proposed framework provides valuable implications for financial institutions and policymakers aiming to accelerate digital banking adoption. Banks can enhance perceived usefulness by introducing value-added features such as personalized financial insights, faster transaction processing, and integrated payment ecosystems. Simultaneously, improving system usability and interface design can reduce perceived complexity and increase user satisfaction. Strengthening cybersecurity measures and transparent communication strategies can further reinforce trust, while targeted social marketing campaigns can leverage peer influence to enhance subjective norms. Collectively, these strategies support a holistic approach to promoting sustainable digital banking adoption and long-term customer engagement.

This structure reflects a cognitive–affective–behavioural pathway, providing a comprehensive explanation of fintech adoption behaviour and extending conventional technology acceptance models (Souiden et al., 2021).

Methodology

A quantitative cross-sectional research design is recommended to empirically validate the conceptual framework (Saunders et al., 2019). Survey-based data collection enables large-scale measurement of consumer perceptions and behavioural intention.

The target population comprises Malaysian banking consumers aged 18 years and above with access to digital devices and internet connectivity (Kemp, 2021). Stratified and convenience sampling techniques can enhance representativeness across demographic segments (Krejcie & Morgan, 1970).

Validated multi-item Likert-scale instruments should be adapted from prior technology adoption studies to ensure construct reliability and validity (Venkatesh et al., 2012).

Structural Equation Modelling (SEM) using AMOS is recommended to test the measurement and structural models, including mediation effects (Kadir et al., 2022).

Conclusion

This conceptual study proposes an integrated TAM–TPB framework to explain digital banking adoption intention among Malaysian consumers. By synthesising technological perceptions, social influence, trust, and personal innovativeness within a unified theoretical structure, the model offers a comprehensive explanation of fintech adoption behaviour (Souiden et al., 2021). The framework contributes theoretically by extending acceptance models and practically by offering insights for digital banks, fintech providers, and policymakers seeking to improve platform design, trust-building strategies, and financial inclusion outcomes (Saif et al., 2022). Future research should empirically validate the proposed model using longitudinal designs and multi-group analysis to examine demographic and regional variations (Irimia-Diéguez et al., 2023).

Furthermore, future studies may enrich the proposed framework by incorporating additional contextual and psychological variables such as perceived risk, digital literacy, service quality, and regulatory support to better capture the dynamic nature of digital banking adoption. Integrating these factors could provide deeper insights into how external environments and user readiness influence adoption behaviour across different usage stages. Such extensions would enhance the robustness of the model and support the development of more targeted intervention strategies aimed at promoting sustainable digital financial ecosystems in emerging economies.

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