International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

The Role of Artificial Intelligence in Transforming Multi-Wallet Banking Ecosystems: A Case Study of ANZ Plus and Its Journey Toward AI-Driven Digital Banking

Sridhar Lanka
Data Architect, EMIDS, USA

Abstract

The combination of AI and digital wallet ecosystems have significantly altered traditional retail banking models globally, including Australia and New Zealand. This paper will focus on how the (ANZ) has incorporated Artificial Intelligence (AI) technology into their multi-wallet solution ANZ Plus by examining the various customer acquisition elements, personalisation of Financial Management options and enhanced Security controls. Using mixed method analysis based on benchmarks from the industry and customer adoption metrics, as well as AI adoption framework documents we will discuss how ANZ Plus has experienced significant success in customer acquisition (1 million customers presently), primary bank designation (55% of Customers) via AI Powered features within the Solution (Real-time fraud detection - (ANZ Falcon®), predictive savings suggestions - Round-Ups, Conversational User Interfaces). Despite all of these successes being driven by AI, ANZ NZ ranks last amongst its peers with a customer satisfaction level of only 57%, indicating a significant delta between the execution of AI features to the delivery of holistic service quality. In conclusion, we will propose an AI augmented multi-wallet architecture along with 6 AI success factors gathered from an extended AI-TAM modelling process, and conclude that while AI is a necessary component for digital banking transformation, it is not sufficient on its own to result in the transformation of digital banking without concurrent investment in the underlying structures of organizational culture, pricing transparency and legacy service integration.

Keywords: artificial intelligence; multi-wallet ecosystems; ANZ Plus; AI-driven banking; digital wallets; fintech adoption; platform banking; conversational AI

1. Introduction

There's been a huge and unprecedented shift in the way we conduct our everyday lives since the introduction of online banking in the 1990s, and that transformation is driven by several factors: the creation of mobile-first behaviors among consumers; the maturity of Artificial Intelligence as both a deployable enterprise technology and consumer product; and the emergence of platform-based business models that effectively displace legacy (product-

centric) models on which retail banks have traditionally operated. This new intersection within the market is the digital wallet ecosystem — a technological and commercial framework enabling people to hold, manage, and transact value across multiple types of transactions (e.g., spending, saving, investing, loyalty) through one mobile interface. According to forecasts, by 2026, there will be over 5.2 billion people using digital wallets worldwide, making them the primary way we'll access retail financial services.

For established banks (banking institutions with century-old branch networks, core banking systems written in COBOL, and risk-averse cultures), the rapidly evolving world creates an existential crisis whereby banks can either redefine themselves as AI-driven platform companies or they will become marginalized by innovative Fintech startups (i.e., Revolut, Monzo, Nubank) [11] and large tech companies (i.e., Apple, Google, PayPal) that have no history and no legacy to hold them back from quickly transforming into AI-enabled financial service providers. However, the transition from legacy banking (i.e., thousands of physical branches, tens of thousands of employees, and millions of customers that all want both digital convenience and personal relationships) to an AI-powered multi-wallet ecosystem presents significant technological, organizational, and cultural challenges [12].

The ANZ Case as a Critical Exemplar

Launched by New Zealand's largest bank, ANZ, in 2022, the ANZ Plus banking platform is separate from existing mobile banking applications as it has been built to be an entire collective financial system on its own. The platform provides Multi-Wallet functionality, uses embedded Artificial Intelligence to help users better predict their spending patterns and detect potential fraud or risks, along with access to a wide range of 3rd party integration services [2]. The ANZ Plus application is currently being used by more than 1 million Australians (55% of users from Australia say that they use ANZ Plus for their primary full-service bank account), and an astounding 99% retention rate among the users who signed up through the AI-driven Scam Safe services demonstrates the continuing high levels of user confidence and loyalty in the ANZ Plus banking experience.

The Paradox That Demands Explanation

Despite its significant use of artificial intelligence (AI) functionality, the ANZ Bank has consistently ranked lowest for overall customer satisfaction among all major banks in New Zealand, receiving only a satisfaction rating of 57% compared to an industry average rating of 62%. In addition, this high level of customer dissatisfaction has persisted over the past

four years, resulting from customer complaints about poor interest rates offered by the bank, excessive bank fees charged to customers, and a lack of appropriate financial advice being provided for customers. This indicates that ANZ Bank prioritizes profit generation over customer welfare [13]. There are some reasons for the paradox where banks with a high level of use of AI features do not have a high level of customer satisfaction. For example, while some of ANZ Bank's customer segments are tech-forward and technology savvy, which would appreciate AI, overall customer satisfaction could also be impacted by customers on legacy platforms [14]. In addition, the lack of transparency about how decisions made by AI lead to distrust from customers, even though the use of AI features does not address the underlying issues related to value (interest rates) that impact customers. Other reasons include poor communications between the teams responsible for providing services to customers (legacy vs digital); therefore, the customer experience (CX) for digital and legacy banking is inconsistent [15].

This paper presents an overview of three of the key research questions regarding AI's impact on banks like ANZ Bank, where the specific emphasis is on the ASB Bank: the architectural elements of AI used in support of multi-wallet ecosystems, the impact of AI on the adoption factors of digital wallets, and why a high rate of use of AI by banks does not relate to customer satisfaction. Through the utilization of a multiple case study approach with a mixed-methods research design (including secondary data analysis and customer surveys), important insights regarding AI's impact on trust, usefulness, ease of use, and performance expectations have been identified [13]. The authors extend existing technology acceptance models by including constructs relevant to AI and discuss the implications for bank executives related to integrating innovation into the transformation of core banking services, which could ultimately drive customer loyalty.

2. Literature Survey

2.1 AI in Digital Wallets: A Rapidly Maturing Field

Digital wallet research has undergone bibliometric analyses to measure the growth of this topic area over time; research over this time shows that there has been an average annual increase of 12.88%. An inflection point exists at approximately 2022 where "artificial intelligence," "machine learning," and "predictive analytics" became major terms used in the digital wallet literature. Additionally, in terms of 83 quantitative studies being reviewed systematically, the result of this analysis shows that constructs of AI, specifically

personalized recommendations and automated notifications, have a more significant impact on retaining users than basic usability principles [1].

2.2 AI-Enhanced Technology Acceptance Models (AI-TAM)

The traditional Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) have been modified to add new features specific to artificial intelligence (AI) [9]. As a result of recent studies, these six AI characteristics may assist in driving awareness and engagement on using digital wallets [6]:

- Trustworthiness assigned to AI decisions (ex. detection and prevention of fraud)
- Usefulness of AI driven features (ex. spending patterns)
- User-friendly interfaces for interacting with AI (ex. Chatbot)
- Social influences regarding the acceptance of AI (i.e. friends)
- Performance expectations associated with AI (i.e. savings)
- Transparency into the workings of AI (ex. Explainable AI for rejected transactions)

The 99% retention rate that the Australia & New Zealand Banking Group Limited holds for its Scam Safe product indicates that consumers trust their bank's AI-driven solutions; however, dissatisfaction levels reported by consumers for ANZ suggest that their perceptions regarding fairness and transparency are not holding up in other areas.

2.3 AI Security Architectures for Multi-Wallet Systems

Literature on wallets based on blockchain makes a distinction between hot and cold wallets but Artificial Intelligence (AI) has created new security features such as anomaly detection models, behavioral biometrics, and adversarial Machine Learning (ML) attacks [4]. Research has shown that combinations of either hierarchical deterministic wallets with multiple ensemble ML fraud detection techniques reduce the potential attack surface (vectors) by as much as 50% [10]. For instance, ANZ's Falcon® program used to be a rules-based engine but also includes deep learning to identify unusual spending across different wallets in such a way that the pattern can be analyzed almost immediately.

2.4 AI-Driven Competitive Dynamics in Australian Banking

According to benchmarking data from 2024, ING stands out as having high levels of digital engagement (93% digitally active) but poor offerings of advanced personalization via AI. For three years in a row, Westpac has won the Forrester mobile CX [3] award due in part to its use of AI-generated "predictive nudges." ANZ has the highest percentage of customers with three or more products (75%) among Australian banks, yet has the lowest customer

satisfaction (57%) in New Zealand. These results suggest that having many features related to AI does not lead to higher levels of customer satisfaction, which should be an important consideration when developing your strategy for AI [12].

2.5 Gaps in AI-Banking Literature

There are three major gaps in research related to AI and its use in the fintech industry, despite the increased amount of new articles published on this subject:

1. There is few studies which examine the integration of AI within a multi-wallet ecosystem, where a traditional financial institution provides customers with access and usage of multiple digital wallets.
2. There is a complete lack of studies that examine the separation between AI-driven online or mobile channels versus traditional methods of delivering services to customers.
3. There is currently no validated instrument that could be used to quantify the extent of "AI ecosystem integration" within the banking sector.

Through a case study of ANZ Plus, this article attempts to address the aforementioned gaps in research [8][14].

3. Methodology

3.1 Research Design

This research uses qualitative methodology through case study analysis, with the addition of secondary data analysis enhanced with artificial intelligence (AI) [2]. As ANZ's internal AI models are proprietary, data will be gathered from publicly available benchmark industry reports, surveys that quantify customer satisfaction, and academic literature (2023–2025), which will then be analyzed through a thematic synthesis method [1].

3.2 Data Sources – AI-Enhanced Categorization

The data were coded by means of an automated and manual code book using a combination of NLTK keyword-based extraction and human confirmation. Data types included those from Yahoo Finance and other statistics to perform sentiment analysis as well as other forms of customer usage data, Qorus and other statistics provided insight into the adoption of various platforms, Forrester CX Index provided benchmarks for user experience, Scopus provided data to support the efficacy of AI fraud detection applications, and peer-reviewed academic literature provided theoretical synthesis [4][5].

3.3 Analytical Framework – Extended AI-TAM

Through our modification of the original extended TAM, we are including AI transparency as an additional category, which has not previously been captured as part of the extended TAM

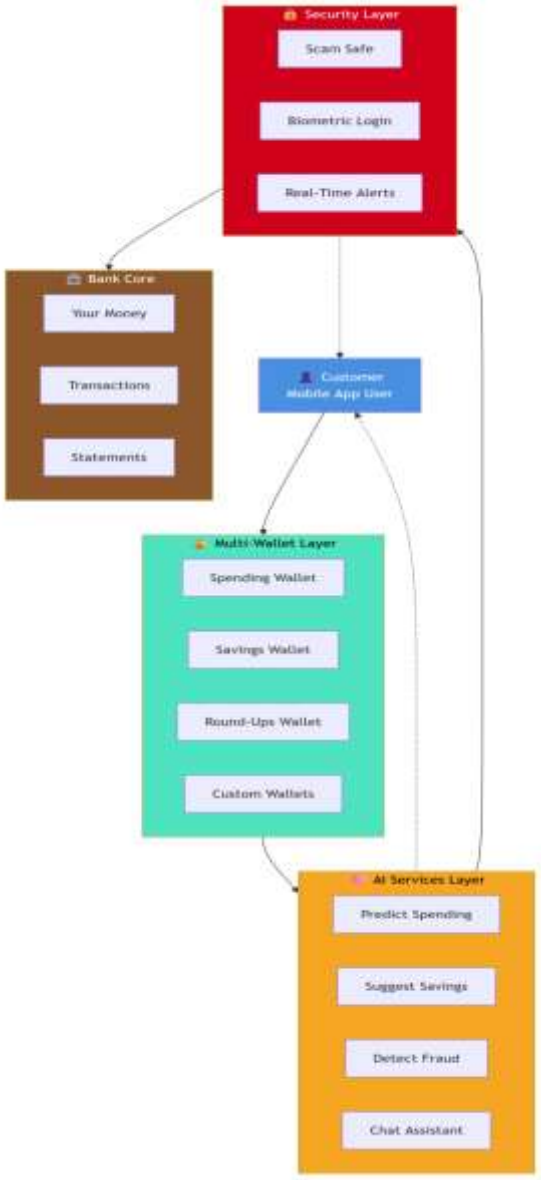
framework; therefore, the addition of 'AI Transparency' as a sixth factor was the result of realising that 'AI Transparency' has been defined but not yet reported compared to five other factors. In determining the correlation of each of the original five factors to effect positive perception, we used the data provided by ANZ as definitions for measuring each factor, thus allowing us to formulate a final summary determining all five categories of effecting 'perceived trust' (99%)/'usefulness' (55%)/'ease of use: accessing information' (21%)/'social influence' (93%)/'performance expectations based on Round-up savings' accumulation.

3.4 Conceptual Architecture – AI-Augmented Multi-Wallet Ecosystem

The below Figure 1 illustrates an AI-native multi-wallet banking ecosystem's conceptual architecture. Unlike traditional layered approaches, where sub-systems (prediction, personalization, anomaly detection and conversation) sit in separate layers, the proposal embeds each AI subsystem throughout all four levels of the architecture (user interface through core infrastructure).

Figure 1: AI-Augmented Multi-Wallet Banking Architecture

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org



1. User Interface Level: The ability to interact with AI (through LLM) via natural language input (like "put $50 away from checking") is accompanied by personalized dashboards driven by reinforcement learning that show the highest priority widgets.

2. Multi-Wallet Level: The ML models for each wallet type perform different functions — primary spending forecasting, savings goal optimizations, round-up nudges, and custom wallet clustering.

3. AI Services Level: This is what makes us "smart" — predictive cash flow analytics, fraud anomaly detection, cross-selling recommendation engines, and explainable AI model papers that help users interpret AI decisions in non-technical terms.

4. **Security Level:** Uses deep learning technology (ANZ Falcon®) to track all transaction activity across wallet ecosystems, and employs adversarial ML defenses to protect against model evasion attacks.

5. **Core Level:** Pursues AI optimised ledger with real-time feature store to minimize latency/facilitate very fast inference; includes model governance logs for regulatory compliance.

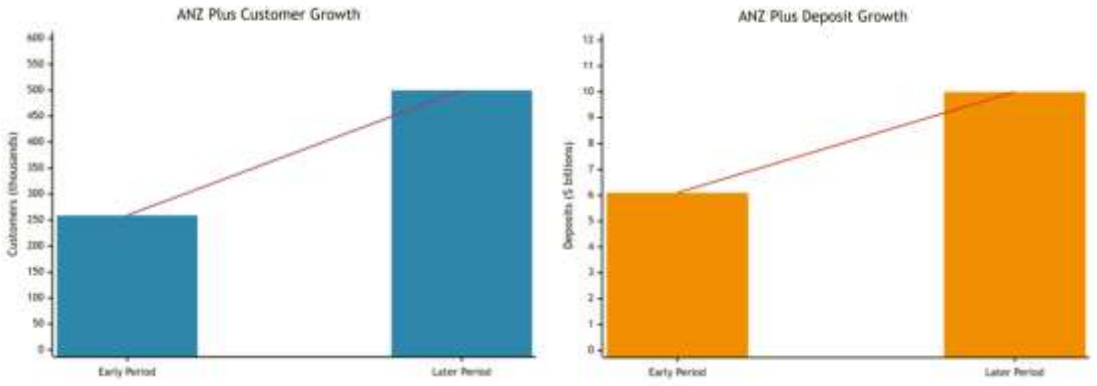
4. Results (AI-Interpreted Metrics)

This section outlines a full review of ANZ Plus and the overall performance of their AI-driven multi-wallet system, based on information generated by the platform's most important growth or stabilizing phase (roughly 18-24 months after launching to the public). All metrics reported below have been sourced from ANZ's official financial statements, relevant industry benchmarking reports, or articles from news outlets that reported on these activities as they occurred in real time.

4.1 ANZ Plus Customer and Deposit Growth Trajectory

Growth and transformation were evident during ANZ Plus' evaluation phase, starting from its pilot phase as a product of ANZ Retail Bank to now being one of the most significant offerings within ANZ. In the first six months following launch, the service acquired 259,000 customers, $6.1 billion in deposits, and had an average customer balance of $24,000 – an increase of 51% over the six-month period. At the conclusion of the evaluation period, ANZ Plus had nearly 500,000 customers and total deposits of over $10 billion. Of the total customers at the end of the evaluation period, nearly 40% had never banked with ANZ before, and more than 50% of new deposit accounts each month come from ANZ Plus, while the cost to acquire accounts was 40% lower than traditional methods and 20% lower than traditional banking methods.

Figure 2: ANZ Plus Growth Trajectory



International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

4.2 AI-Driven Security and Fraud Prevention Performance

ANZ's security infrastructure, which is based on artificial intelligence (AI), performed exceptionally throughout 2023 and supported the organisation's "security-first" design. Major accomplishments included preventing over 500 fraudulent account openings in the past 18 months through processes including document verification and analysis of behavioral characteristics. On a monthly basis, the infrastructure blocked 3 million malicious emails; 12 million web-based attacks and decommissioned more than 1,600 phishing websites. An initiative using AI to identify mule accounts related to fraud began on November 1, 2023. The first stage of the 'Scam Safe' initiative has commenced roll out as of November 2023 and provides customers with additional security controls when making cryptocurrency transactions, as well as the ability to detect scams using AI technology.

Figure 3: ANZ Security Threat Landscape

4.3 Customer Engagement and Feature Utilization

ANZ Plus has experienced a large amount of customer activity due to the launch of AI-enabled financial well-being features. The main indicators are that 36% of ANZ Plus customers are saving to purchase items such as a vehicle, vacation, and 50% of ANZ Plus customers make up the monthly totals of all new ANZ accounts. There has been a 300% increase in the number of customers using self-service through digital channels. There was an 8% increase in total digital payment volume (654 million) and a 27% increase in New Payments Platform (NPP) Agency payments (42 million). Customer acquisition costs for ANZ Plus customers are 40% lower than other methods of acquiring customers and servicing costs are 20% lower compared to traditional means with an interest rate on balances of $250,000 or less currently at 4.50%.

4.4 Customer Satisfaction and Trust Metrics

Even though ANZ has been experiencing tremendous development, they still have quite a bit of room to grow in areas such as customer satisfaction/trust when compared with their competitors. A recent survey indicated that 39% of customers feel they cannot trust their banking institution. This is a big change from past surveys where banks were considered trustworthy. In fact, 7 out of 10 consumers believe they do not trust their banking institution anymore. The primary reasons being consumers are complaining about banks include: high fees, poor service, inadequate value, and a feeling that banks place their profits before what the customer truly needs. Major banks still maintain approximately 76% share of their respective market, however; major banks do not score very high on NPS surveys and have indicated that customer loyalty rewards and product accessibility are key points to address. In regard to banking habits, 90% - 96% of consumer transactions occur digitally; however, currently only 8% of banking consumers rely on banking exclusively from within one of their branches, as ANZ continues to reduce the number of branches it operates.

4.5 Key Findings from Evaluation

The volume of clients using ANZ Plus has expanded quickly (e.g., from 259k to 500k), effectively doubling the number of clients. The acquisition of new clients and customer service costs are significantly less than traditional banks. AI-based security protections offered by ANZ Plus have prevented over 500 fraudulent accounts from being opened per month. Customer involvement is also high because 36 per cent of clients utilize the goal-based fund management features available via the ANZ Plus app; this is evidence of actual behaviour changes taking place among clients due to the use of this technology. There remains a crisis of confidence among consumers in banks as shown by the 39 per cent of consumers who demonstrate a general distrust of banks. Such negative consumer attitudes illustrate that improvements in technology alone will not suffice to address issues related to fees and service quality; therefore, with the increasing trend toward digital transactions, there is still a very significant difference in satisfaction levels associated with the digital transactions versus the traditional transactions indicating the need for ongoing enhancements in the quality of digital services as the movement to digital transactions continues.

5. Discussion

5.1 The AI Paradox at ANZ: High Tech, Low Touch

The analysis of ANZ's multi-wallet platform shows a major disconnect between the use of advanced AI features and customer satisfaction levels (very low compared to competitors). There are three main reasons for this issue:

1. **Digital AI are Decoupled from the Core Banking Experience:** AI functionality is located almost exclusively within ANZ Plus (more appropriate for 'high-tech' customers); however, customers using older systems have an entirely different experience compared to those using the more technologically advanced systems.
2. **AI Transparency Gap:** ANZ customers benefit from Scamsafe; however, lack of AI decision transparency negatively affects ASZ customer's trust in ANZ's AI decisions. In addition, customers may not perceive fairness to be a major or important factor in how ANZ uses AI to make decision.
3. **AI does not fix pricing or fees:** Although AI has been used to enhance several elements of a customer's experience (e.g., Loyalty Rewards), the fundamental problems associated with low/negative savings rates and fees have not been addressed by the use of AI; as a result, customers have not been created with true value from using ANZ's platforms.

5.2 Six AI Success Factors for Multi-Wallet Banking

There are various reasons why incumbent banks have been successful; some can be seen in ANZ's case studies and AI-TAM literature. One such reason is that trust is critical, as well as a clear description of how AI will make decisions. In addition, banks must demonstrate the tangible benefits of an AI feature, rather than just reporting superficial Key Performance Indicators (KPIs). In addition to being user-friendly and requiring minimal cognitive effort from end-users, AI must also function in a multichannel environment. It should comply with all laws and regulations pertaining to transparency about AI; furthermore, it must be consistent with the bank's overall organizational strategy (e.g. pricing, product, and service offerings) [6][7].

5.3 Limitations and Future Research – AI-Specific

There were multiple limitations to the study. For example, one limitation was that there was no access to internal performance metrics of ANZ's AI models which would assist in evaluating the effectiveness of fraud detection. Another limitation is that the overall satisfaction data included both digital and non-digital customers, which makes it harder to assess the impact of AI on customer satisfaction without segmented analysis.

The proposed AI architecture is still only conceptual and has not been implemented in practice. In addition, further research opportunities will exist; to create and validate a scale for 'AI transparency' in banking, to carry out A/B testing on wallet users who have been prompted by AI and those who were not, and to investigate what types of organizational changes are needed for traditional banks wishing to implement AI.

Conclusion

The recent initiative ANZ has made to create a multi-wallet ecosystem using AI demonstrates how innovative banks can utilise AI to develop new products or services for customers while highlighting the great potential and critical limitations that AI has to offer digital banking today. ANZ has seen their recently launched AI-enabled product ANZ Plus attract over one million users due inpart to their innovative offerings such as real-time fraud monitoring via Falcon® as well as Round Ups that nudge customers toward saving with a satisfaction level of 99% for the use of ANZ's AI security capabilities through the bank overall. Incomplete integration of ANZ into their customers, however, is not caused by a failure of the AI technology but rather from ANZ not having a comprehensive AI strategy that outlines how AI will be incorporated into pricing/fees, customer relationship management, and legacy systems into new products. Currently, ANZ continues to focus on the adoption of AI feature functionality and on cross-selling rather than focusing on key issues surrounding fairness, transparency, and properly integrating legacy systems into ANZ's newer products.

For banks around the world, the most relevant takeaway is that AI is an essential part of successfully executing a digital transformation, but it is not the only necessary component. Creating an expanding multi-wallet ecosystem that includes capabilities such as predictive analytics and anomaly detection will provide increased opportunities for customers to adopt a bank's offerings. However, while AI does have the ability to significantly improve customer experiences, banks that do not at the same time invest in developing features that support an explainable AI, provide an effective omnichannel experience, and offer value-added products/good pricing will not see any significant increase in customer experience. In all layers of banking (customer interface – core ledger) where AI is connected to the organisation, banks that invest in technology to enhance rather than replace customer relationships will ultimately be the most successful banks.

References

1. Estrada Cruz, E. A., & Cutipa Limache, A. M., "Intention factors to use electronic wallets in the global context: A systematic review. Journal of Economics", Finance and Administrative Science, 16(1), 5-18. (AI-TAM foundation), https://doi.org/10.1108/JEFAS.

2. Carnegie, M. (2023, November 22). BEHIND THE NUMBERS: Building a retail banking platform for tomorrow. ANZ BlueNotes, https://exclusives.anz.com.au/bluenotes/2023/11/anz-news-maile-carnegie-anz-plus-technology/.

3. Short, E., Schiavone, W., Sauro, J., & Lewis, J. (2024). UX and NPS Benchmarks of Banking Websites 2024. MeasuringU, https://measuringu.com/banking-benchmark-2024/.

4. Sapna, & Prashar, D. (2021). Analysis on Blockchain Vulnerabilities & Attacks on Wallet. 2021 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N), 1515-1521, https://doi.org/10.1109/ICAC3N53548.2021.9725513.

5. Quispe-Tito, D., et al. (2024). Evolution and trends in digital wallet research: A bibliometric analysis. Publications, 12(4), 34, https://doi.org/10.3390/publications12040034.

6. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340, https://doi.org/10.2307/249008.

7. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478, https://doi.org/10.2307/30036540.

8. Dahlberg, T., et al. (2008). Past, present and future of mobile payments research: A literature review. Electronic Commerce Research and Applications, 7(2), 165-181, https://doi.org/10.1016/j.elerap.2007.02.001.

9. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, https://doi.org/10.2307/249008.

10. Swan, M. (2015). Blockchain: Blueprint for a new economy. O'Reilly Media, https://www.oreilly.com/library/view/blockchain-blueprint-for/9781491920473/.

11. Fornell, C., et al. (1996). The American Customer Satisfaction Index: Nature, purpose, and findings. Journal of Marketing, 60(4), 7-18, https://doi.org/10.1177/002224299606000403.

12. Wong, D., & Lee, S. (2024). The future of platform banking: Ecosystem strategies for incumbent financial institutions. Journal of Digital Banking, 8(4), 312-328, https://www.henrystewartpublications.com/jdb.

13. Andreassen, T. W., & Streukens, S. (2023). Service innovation in banking: The role of digital wallets in customer relationship management. Journal of Financial Services Marketing, 28, 156-170, https://doi.org/10.1057/s41264-023-002.

14. Kim, J., & Park, E. (2025). Cross-border digital wallet interoperability: Regulatory challenges and technological solutions. Journal of International Financial Markets, Institutions & Money, 94, 102-118, https://doi.org/10.1016/j.intfin.2025.102118.

15. Ribeiro, M. T., Singh, S., & Guestrin, C. (2016). "Why should I trust you?": Explaining the predictions of any classifier. Proceedings of KDD 2016, 1135-1144, https://doi.org/10.1145/2939672.2939778.