



# DIGITAL TRANSFORMATION OF BRANCH OFFICES: BALANCING PHYSICAL AND DIGITAL SERVICES IN THE ERA OF SMART BANKING

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## ABSTRACT

The rapid development of digital technology has encouraged the banking industry to transform branch office services into a more integrated system that combines physical and digital services. Banking digitalisation through mobile banking, internet banking, artificial intelligence, and digital savings services has changed customer transaction patterns in the smart banking era. This study aims to analyse branch office transformation strategies in balancing physical and digital services while maintaining service quality and customer trust. This study employs a qualitative descriptive method based on a literature review of selected scientific journal articles, books, and relevant academic sources discussing digital banking transformation, service quality, customer trust, and smart banking. The literature sources were selected based on their relevance to the research topic, publication credibility, and contribution to the discussion of physical and digital service integration in banking. The results indicate that branch transformation does not entirely eliminate the role of physical services, but rather transforms branches into centres for consultation, education, and customer relationship management. Meanwhile, digital services serve to enhance transaction efficiency, speed, and flexibility. The challenges encountered include cybersecurity risks, low digital literacy, regulatory adaptation, and the need to enhance human resource competencies. Consequently, collaboration between technological innovation and service quality strategies becomes a crucial factor in supporting sustainable smart banking transformation.

## 1. INTRODUCTION

Advances in digital technology have brought about significant changes in banking services. Digital transformation has not only altered the way banks operate, but has also changed the nature of interactions between banks and customers. Today, people prefer services that are fast, convenient, flexible, and accessible at any time via digital devices. These conditions have prompted the banking sector to transform its branch offices by striking a balance between physical and digital services in the era of smart banking. According to Putra (2024), "the digitalisation of banking services, such as mobile banking, chatbots, and AI-based technology, plays a vital role in reducing operational costs, speeding up transaction processes, and enhancing the convenience and personalisation of services." This statement highlights that digital services are a key component in improving a bank's operational efficiency. The presence of digital technology means that the majority of transactions can be carried out online without the need to visit a branch in person.

Although digital services are growing rapidly, branch offices continue to play a vital role in the banking industry. Branch offices no longer serve merely as places for transactions, but have evolved into centres for consultation, education and customer service. Larassati and Fauzi explain that service quality is a key factor in maintaining customer loyalty. Therefore, the transformation of branch offices must strike a balance between efficient digital services and physical services that remain personalised.

This shift in service models has also been influenced by increasing competition within the financial industry in the digital economy era. The emergence of financial technology (fintech) is forcing banks to continuously innovate in order to remain competitive. Tsakila et al. (2024) state that "banks that are able to adapt and collaborate with fintech actually experience increased operational efficiency, reduced

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transaction costs, and expanded access to services.” This demonstrates that the transformation of banking services must be supported by continuous technological innovation.

On the other hand, the digital transformation of the banking sector also presents new challenges regarding data security and customer protection. The risks of online fraud, personal data breaches, and cybercrime are becoming increasingly prevalent. Sinta, Zakia, and Safitri (2025) explain that “robust legal protection is vital to maintaining customer trust in digital banking in Indonesia.” Consequently, strengthening digital security systems and legal safeguards is a crucial aspect of the smart banking transformation. In addition to the technological aspect, the transformation of branch offices also requires human resource readiness. Banking staff are required to be proficient in digital services whilst maintaining the quality of face-to-face customer service. Consequently, the transformation of banking services focuses not only on technology but also on enhancing service competencies.

Based on the above, this study aims to analyse branch office transformation in balancing physical and digital services in the era of smart banking.

## **2. METHODS**

This study employs a qualitative method with a descriptive-analytical approach. This approach was chosen because the study aims to analyse the transformation of bank branches in balancing physical and digital services in the era of smart banking. The focus of the research is not on statistical measurement, but rather on a conceptual understanding of changes in branch functions, digital service integration strategies, and their implications for service quality, customer protection, and the operational sustainability of banking.

The research method used in this study is a literature review. Data were obtained from secondary sources, including national and international scientific journals, academic articles, reference books, institutional reports, and regulations related to banking digital transformation, smart banking services, financial technology, service quality, banking innovation, and legal protection for customers. The literature search was conducted through several academic databases and search engines, including Google Scholar, ScienceDirect, SpringerLink, Emerald Insight, ResearchGate, and national journal portals such as Garuda and Sinta. The keywords used in the search process included “digital banking transformation,” “smart banking,” “branch office transformation,” “banking digitalisation,” “physical and digital banking services,” “banking service quality,” “customer trust in digital banking,” “financial technology,” and “customer protection in banking.”

The literature selection was limited to publications from 2018 to 2024 in order to ensure the relevance and recency of the discussion, particularly because digital banking transformation has developed rapidly in recent years. From the initial search results, the researcher identified several relevant sources and then conducted a screening process based on title, abstract, and content suitability. The primary sources used in this study consisted of eleven scientific journal articles selected purposively because they directly discussed banking digital transformation, smart banking, branch transformation, customer behaviour, service quality, digital innovation, and customer protection.

The inclusion criteria for selecting literature were as follows: (1) publications discussing digital transformation in banking or smart banking; (2) studies explaining the role of physical and digital services in the banking industry; (3) articles containing discussions on customer behaviour, service quality, banking innovation, or customer trust; (4) sources relevant to the transformation of bank branch operational models; and (5) publications from credible journals, academic publishers, official institutions, or regulatory bodies. Meanwhile, the exclusion criteria included: (1) publications that did not specifically discuss banking or financial services; (2) articles that only focused on general technology adoption without connection to banking services; (3) sources with unclear authorship or publication credibility; (4) duplicate publications; and (5) literature published outside the selected year range, except for regulations or reference books considered conceptually important.

Data collection was carried out through documentation, namely by searching, identifying, classifying, and reviewing literature directly relevant to the research topic. The selected literature was then classified according to several main themes, including branch transformation, digital banking services, physical-

digital service integration, service quality, customer trust, cybersecurity, regulatory adaptation, and customer protection.

Data analysis was conducted using an interactive analytical model consisting of three stages: data reduction, data presentation, and conclusion drawing. During the data reduction stage, the researcher selected and simplified information from the literature relevant to the research focus. In the data presentation stage, the classified information was organised systematically based on key themes, such as branch transformation, digital banking, service quality, physical-digital service integration, and customer protection. In the conclusion-drawing stage, the researcher interpreted the literature findings to formulate a conceptual understanding of strategies for balancing physical and digital services in the development of smart banking.

To ensure the validity of the data, this study employed source triangulation by comparing various scientific journals, academic articles, institutional reports, regulations, and reference books. Triangulation was carried out so that the analysis would not rely on a single source, but would instead be supported by diverse academic and normative perspectives. Consequently, the research findings are expected to make a conceptual contribution to the development of studies on banking transformation, particularly regarding the repositioning of branch offices within the digital financial services ecosystem.

### **3. RESULTS AND DISCUSSIONS**

#### **The Transformation of Branch Office Functions in the Era of Smart Banking**

The findings of the study indicate that the transformation of branch offices in the era of smart banking is not merely about reducing manual transaction activities, but also reflects a fundamental shift in the banking service model. Branch offices, which previously served as the primary hubs for transactions, are now undergoing a shift in function to become centres for consultation, financial education, customer issue resolution, and the strengthening of customer relationships. This shift aligns with changes in customer behaviour, which increasingly prioritises speed, flexibility, and ease of access to services via digital channels. From a digital transformation perspective, these changes indicate that digitalisation serves not only as a tool for transaction automation but also as a strategy for organisational change. ( explains that digital transformation involves changes to business processes, organisational structures, and the creation of value for customers. Consequently, the transformation of branch offices must be understood as a process of restructuring service functions, rather than merely the replacement of physical services with digital ones.

These findings are also consistent with the ' , which emphasises that the digitalisation of financial services has transformed industry structures, business models, and the way financial institutions interact with customers. In the context of branch offices, digitalisation is driving banks to shift routine transactions such as transfers, payments, account openings, and balance enquiries to mobile banking, internet banking, ATMs, and self-service machines. Consequently, branch offices are no longer positioned as venues for mass transactions, but as value-added service spaces that address customers' complex needs. However, a key finding of this study indicates that the transformation of branch offices should not be interpreted as the disappearance of the branch office function (Madegowda, 2025) emphasises that although digital services offer convenience and efficiency, branch offices continue to play a vital role in building trust, addressing complex needs, and providing personalised service. Therefore, the ideal branch office transformation is not a shift towards fully branchless banking, but rather the development of a hybrid banking model that integrates the strengths of physical and digital services.

#### **Drivers of Branch Office Transformation**

The transformation of branch offices is driven by several key factors, namely the development of digital technology, changes in customer behaviour, competition from fintech firms, and the demand for operational efficiency. Technological advancements such as mobile banking, artificial intelligence, big data, cloud computing, biometric authentication and automation have enabled banks to provide faster, more personalised and measurable services. These technologies enhance banks' ability to understand customer behaviour and provide data-driven services (Felipe et al., 2025) explains that digital transformation in commercial banks is driven not only by the adoption of technology, but also by the need to develop strategies at the micro, meso and macro levels, including improvements to the customer experience, data security and digital inclusion. Consequently, technology cannot be positioned as an end in itself, but rather

as a strategic instrument to enhance the value of banking services. The second factor is the shift in customer behaviour and expectations. Modern customers demand services that are fast, easily accessible, secure, and available around the clock. These changes are linked to the increasing use of smartphones and the emergence of a culture of instant service within the digital society. (Shankar et al., 2003; Venkatesh et al., 2003) through the Unified Theory of Acceptance and Use of Technology explains that technology adoption is heavily influenced by perceived usefulness, ease of use, social influence, and supporting conditions. In the banking context, customers are more likely to accept digital services if these are perceived as practical, secure, and suited to their needs.

However, not all customers have the same level of digital readiness. Certain groups, particularly elderly customers, those with low digital literacy, and customers in areas with limited access to technology, still require in-person services. Therefore, the transformation of branch offices must take into account the aspect of service inclusion. Banks that move too quickly to reduce the functions of their branches without providing digital support risk creating service exclusion for certain customer groups. The third factor is competition from fintech. The emergence of fintech has put competitive pressure on banks, as fintech firms are able to offer payment, lending, investment and money transfer services quickly and simply. Gomber et al. (2018) note that the development of fintech is driving major changes in digital financial services, including in the way financial institutions manage innovation, efficiency and customer relationships. Therefore, banks need to respond to competition from fintech not only through the digitalisation of products, but also by strengthening trust, security, and service quality which remain the key strengths of banking institutions. The fourth factor is the demand for operational efficiency. The digitalisation of services enables banks to reduce transaction costs, minimise queues at branch offices, speed up service processes, and optimise the roles of staff. However, this efficiency must be balanced with an improvement in service quality. If digitalisation is focused solely on cost reduction without taking the customer experience into account, the transformation may lead to a decline in customer satisfaction and loyalty.

#### **Forms of Branch Office Transformation**

The transformation of branch offices in the era of smart banking can be seen through four main models: the digital branch concept, self-service banking, hybrid banking services, and the integration of offline and online services. Firstly, the digital branch concept reflects a shift in branch design from conventional transaction spaces to technology-based service spaces. In this model, digital devices such as tablets, self-service machines, video banking and digital queuing systems are used to speed up service processes. Secondly, self-service banking is an important form of transformation as it enables customers to carry out transactions without direct assistance from bank staff. (Meuter et al., 2000) explains that self-service technology enables customers to generate services independently through interaction with technology. In the context of banking, self-service banking helps to reduce the burden of routine transactions at branch offices and improve customers' time efficiency.

However, the implementation of self-service banking does not always guarantee customer satisfaction. (Parasuraman, 2000; Parasuraman et al., 2005; Sheng & Liu, 2010) emphasises that the quality of electronic services is influenced by efficiency, system reliability, service fulfilment, privacy, responsiveness, compensation, and contact. This means that digital services which are fast but frequently experience disruptions, are difficult to use, or do not provide adequate data protection can undermine customer trust. Thirdly, hybrid banking services are the most relevant model in the era of smart banking. This model allows customers to use digital services for simple transactions, whilst still receiving support from branch offices for more complex services. Hybrid banking brings together two distinct needs: digital efficiency and interpersonal trust (Madegowda, 2025) emphasises that branch offices remain relevant because they are able to provide personalised service and handle needs that cannot be fully met through digital channels.

Fourthly, the integration of offline and online services is a key indicator of the success of smart banking. This integration enables customers to initiate a service via a digital app, continue the process at a branch, and complete the service via a digital channel. This model creates a service experience that is more consistent, flexible and customer-centric. In a study of customer experience, Mbama and Ezepue (2018) state that the digital banking experience is influenced by service quality, functional value, convenience,

trust, and customer engagement. Therefore, the integration of physical and digital channels must be geared towards creating a holistic experience, rather than separate services.

### **Balancing Physical and Digital Services**

The findings of the study indicate that striking a balance between physical and digital services is a key issue in branch office transformation. Digitalisation does indeed enhance the speed, efficiency and accessibility of services. However, physical services continue to play a strategic role in building trust, providing advice and resolving complex issues. Consequently, the success of smart banking is measured not only by the number of services successfully migrated to digital channels, but also by the bank's ability to maintain the quality of its customer relationships (Cochrane, 2016) explains that digital quality influences perceived service quality, customer satisfaction and brand loyalty in the banking industry. These findings suggest that digital service quality is a key factor in maintaining customer satisfaction. However, digital quality cannot entirely replace the value of human interaction in service contexts that require empathy, in-depth explanations and problem-solving.

In this context, branch offices must be repositioned as advisory centres. Bank staff will no longer act merely as tellers or administrative staff, but as financial advisors, relationship managers, and educators for customers ( ). This change requires an improvement in human resource competencies, particularly in terms of technological proficiency, customer service communication, financial literacy, and the ability to resolve customers' issues on a personal level. The balance between physical and digital services is also linked to trust. Customer trust is built not only through secure digital systems, but also through a service experience that is consistent, transparent and responsive. If customers encounter difficulties with digital services, the presence of a branch office serves as a channel for restoring trust. Therefore, an ideal smart banking strategy must position the branch office as part of the digital ecosystem, rather than as an entity separate from digital services.

### **Technological Innovation in Smart Banking**

Technological innovations in smart banking include mobile banking, digital savings, QR payments, AI-based services, chatbots, biometric verification, data analytics and the integration of fintech services. These innovations help banks speed up services, expand financial access and enhance service personalisation. However, technological innovation must remain focused on delivering greater value to customers, rather than merely modernising the appearance of services (Leeflang et al., 2014; Verhoef et al., 2021) emphasise that digital transformation requires organisations to transform their value creation processes. In the banking context, service value arises not only from the availability of digital applications, but also from ease of use, transaction security, response speed, and the bank's ability to provide solutions tailored to customer needs. Therefore, technologies such as artificial intelligence and big data analytics must be used ethically and responsibly to enhance services, rather than merely collecting customer data. Technological innovation also enhances the potential for personalised services. Through data analysis, banks can understand customers' transaction patterns, financial needs and preferences. However, the use of customer data must be balanced with privacy protection. (Wang et al., 2021) shows that digital transformation in the banking sector presents serious challenges regarding data privacy and cybersecurity. Consequently, service innovation must always go hand in hand with digital security governance.

### **Customer Protection and Digital Security Risks**

The transformation to smart banking increases digital security risks, such as phishing, data theft, social engineering, malware, OTP misuse, and fraud committed in the bank's name. These risks demonstrate that the digitalisation of banking not only brings opportunities for efficiency but also creates new vulnerabilities for customers. Consequently, customer protection is a fundamental aspect of smart banking development. Wang (2024) explains that banks face significant challenges in safeguarding data privacy and cybersecurity when implementing new technologies. (Saeed et al., 2023) also emphasises that digital transformation can enhance business resilience, but simultaneously expands the surface area of cybersecurity risks. In the context of smart banking, these risks stem not only from weaknesses in the banking system, but also from customers' low levels of digital security literacy. Therefore, customer protection must be achieved through two approaches. Firstly, a technological approach, which involves strengthening security systems through multi-factor authentication, data encryption, fraud detection

systems, biometric authentication and real-time transaction monitoring. Secondly, an educational approach, which involves improving customers' digital literacy so that they are able to recognise fraud schemes, safeguard the confidentiality of their personal data and understand transaction security procedures. This educational approach is important because many cases of digital crime occur as a result of psychological manipulation of customers. Customers may be tricked into providing OTPs, accessing fake links, or following instructions from individuals claiming to be bank employees. Therefore, banks need to turn their branch offices into centres for digital security education. In this way, branch offices will serve not only as service points, but also as spaces for digital literacy and risk mitigation.

### **The Challenges of Smart Banking Transformation**

The transformation to smart banking faces several key challenges. Firstly, the challenge of cyber security. As more services are conducted digitally, the risk of attacks on banking systems increases. This challenge requires banks to continually update their security systems and strengthen their information technology risk management. Secondly, the challenge of digital literacy. Not all customers possess the same ability to use digital services. This literacy gap can lead to inequalities in access to services. If banks focus solely on full digitalisation without considering customers' readiness, certain sections of the public may face difficulties in accessing banking services. Thirdly, human resources challenges. The transformation of branch offices requires changes in staff competencies. Bank staff are not only expected to be friendly and competent in administrative tasks, but must also understand digital services, be able to provide technology training, and resolve customer issues swiftly. Consequently, the smart banking transformation must be accompanied by ongoing staff training.

Fourthly, the challenge of technology investment costs. The development of applications, cloud infrastructure, data security, AI, and channel integration systems requires significant expenditure. Banks need to ensure that technology investments genuinely result in improved service quality, operational efficiency, and customer loyalty. Fifth, regulatory challenges. Technological developments often outpace regulatory updates. This can create legal loopholes regarding personal data protection, digital dispute resolution, bank liability and the security of electronic transactions. Therefore, the transformation to smart banking requires synergy between banks, regulators, technology providers and the public. Based on the above discussion, it can be concluded that the transformation of branch offices in the era of smart banking must be directed towards a balanced service model. Digitalisation is necessary to improve efficiency, accessibility and speed of service. However, physical services remain important for building trust, providing consultation, handling complex needs, and supporting customers who are not yet digitally ready. Thus, the most relevant branch office transformation strategy is not to eliminate branch offices, but to reposition them as value-added service centres within the digital banking ecosystem.

### **4. CONCLUSION**

The transformation of branch offices in the era of smart banking represents the banking sector's adaptation to developments in digital technology and changing public needs. The presence of digital services such as mobile banking, internet banking, artificial intelligence, and digital savings has transformed customer transaction patterns, making them faster, more flexible, and more efficient. Nevertheless, digital transformation has not entirely eliminated the role of physical branch offices. Branch offices continue to play a vital role as centres for consultation, education, complaint handling, and the development of emotional relationships with customers. This demonstrates that striking a balance between physical and digital services is a key strategy in maintaining the quality of banking services.

The smart banking transformation also offers various benefits, such as improved operational efficiency, expanded access to financial services, and an enhanced customer experience. However, this transformation process still faces numerous challenges, including cybersecurity risks, low levels of digital literacy among the public, human resource readiness, technology investment costs, and the need for regulatory adjustments. Therefore, the success of branch office transformation in the era of smart banking is determined not only by technological sophistication, but also by the bank's ability to maintain service quality, build customer trust, and create balanced collaboration between digital innovation and human-centred service. Practically, banks need to strengthen digital literacy programs for customers so that the public can use digital banking services safely, effectively, and confidently. Banks should also improve

employees' digital competencies through continuous training, particularly in the use of digital banking platforms, cybersecurity awareness, data-based customer service, and consultative communication. In addition, branch offices need to be redesigned from transaction-oriented service points into advisory, educational, and relationship-based service centres. Through this repositioning, branch offices can remain relevant in the digital era by supporting customers who require direct assistance, complex financial consultation, or protection from digital service risks. Thus, sustainable smart banking transformation requires an integrated strategy that combines technological innovation, customer education, employee capacity building, and the redesign of branch functions. This balance will enable banks to improve efficiency and service accessibility while still preserving trust, security, and human interaction as essential elements of banking services.

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