

Reshaping Banking Behavior: A Structural Model of Real-Time System Integration and Open Banking Readiness in Reducing Churn Propensity

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ABSTRACT

This study aims to analyze the influence of real-time system integration and open banking readiness on churn propensity in Indonesia's digital banking context, considering the mediating roles of customer experience quality and perceived value. This study is based on the Service-Dominant Logic and Dynamic Capabilities perspectives to understand how technology convergence can shape value creation and customer retention mechanisms in an increasingly interoperable financial ecosystem. Using the partial least squares method, the results show that real-time system integration has a significant effect on the quality of customer experience but not a direct effect on perceived value. Open banking readiness has been shown to significantly influence the quality of customer experience and perceived value, with a particularly strong effect on the latter. Furthermore, customer experience quality and perceived value have a significant negative effect on churn propensity, indicating that the better the experience and the higher the perceived value, the lower the propensity of customers to switch banks. This study contributes by demonstrating a shift in the source of competitive differentiation from infrastructure capabilities to ecosystem readiness in the digital banking industry. Practically, these findings emphasize the importance of strengthening ecosystem integration, data governance, and digital collaboration to increase customer value and reduce churn rates.

ABSTRAK

Studi ini bertujuan untuk menganalisis pengaruh integrasi sistem real-time dan kesiapan open banking terhadap kecenderungan perpindahan nasabah dalam konteks perbankan digital di Indonesia, dengan mempertimbangkan peran mediasi kualitas pengalaman pelanggan dan nilai yang dirasakan. Studi ini didasarkan pada perspektif Service-Dominant Logic dan Dynamic Capabilities untuk memahami bagaimana konvergensi teknologi dapat membentuk penciptaan nilai dan mekanisme retensi pelanggan dalam ekosistem keuangan yang semakin interoperabel. Menggunakan metode Partial Least Squares, hasilnya menunjukkan bahwa integrasi sistem real-time memiliki pengaruh signifikan terhadap kualitas pengalaman pelanggan, tetapi tidak berpengaruh langsung terhadap nilai yang dirasakan. Sebaliknya, kesiapan open banking terbukti secara signifikan memengaruhi kualitas pengalaman pelanggan dan nilai yang dirasakan, dengan pengaruh yang sangat kuat pada nilai yang dirasakan. Lebih lanjut, kualitas pengalaman pelanggan dan nilai yang dirasakan memiliki pengaruh negatif yang signifikan terhadap kecenderungan churn, menunjukkan bahwa semakin baik pengalaman dan semakin tinggi nilai yang dirasakan, semakin rendah kecenderungan pelanggan untuk beralih bank. Studi ini berkontribusi dengan menunjukkan pergeseran sumber diferensiasi kompetitif dari kemampuan infrastruktur ke kesiapan ekosistem dalam industri perbankan digital. Secara praktis, temuan ini menekankan pentingnya memperkuat integrasi ekosistem, tata kelola data, dan kolaborasi digital untuk meningkatkan nilai pelanggan..

1. INTRODUCTION

Over the last decade, Indonesia's banking industry has experienced an accelerated shift toward digitally integrated service models, largely driven by regulatory reform, technological advancement, and changing customer expectations. Initiatives promoted by Bank Indonesia, especially emphasizing interoperability, real-time settlement, and standardized digital interfaces, have encouraged banks to redesign their internal systems and external service platforms into increasingly interconnected structures. Consequently, Indonesian banks are increasingly operating within a connected banking architecture, in which real-time data exchange, system integration, and platform openness enable customers to conduct transactions and access services across institutions with minimal disruption.

From an international perspective, connected banking architecture, which often materializes through open banking frameworks and API (Application Programming Interface)-based integration, has been broadly recognized as a transformative force within the financial services sector. Previous research indicates that real-time system connectivity and open banking preparedness not only promote innovation and efficiency but also alter customer perceptions of value and their interactions with banking services (Mutambik, 2023; Babina et al., 2025). As financial services become integrated within the digital ecosystem, the quality of customer experience and perceived value emerge as pivotal mechanisms connecting technological infrastructure to behavioral outcomes, including continued usage and switching intentions.

Empirical evidence from Indonesia further reinforces these arguments. Internationally published studies have shown that Indonesian consumers exhibit a relatively high level of openness toward open banking solutions, particularly when banks demonstrate strong organizational readiness, system reliability, and ease of use (Yoon & Lim, 2021; Iman et al., 2023).

Moreover, research focusing on Indonesia's open banking environment highlights that API-driven connectivity with third-party providers has intensified market reaction and broadened customer access to financial services, thereby altering competitive dynamics within the banking sector (Hasantina & Wicaksono, 2025). These findings indicate that connected banking architecture is no longer peripheral but rather foundational to how banking services are delivered and experienced in Indonesia.

At the core of this transformation is Bank Indonesia's advancement of the national payment infrastructure, exemplified by BI-FAST, which facilitates 24/7 real-time clearing and settlement of retail transactions. In conjunction with supporting real-time settlement, the API (Application Programming Interface) payment standard has been standardized to promote collaboration among banks and third-party financial technology providers. These standards are designed to enhance efficiency, speed, security, and interoperability within the financial ecosystem, enabling customers to execute transactions seamlessly across various platforms and providers.

Nevertheless, the Indonesian banking context displays a distinctive structural characteristic. Unlike markets where banks differentiate themselves through divergent technological design or proprietary platforms, Indonesian banks tend to implement a highly similar architectural configuration. Regulatory harmonization and shared infrastructure have led to standardized backend systems and interoperable service layers across institutions. From the customer perspective, this convergence creates a relatively uniform digital environment, which can be understood as a one-pot banking ecosystem where transfers, payments, and service interactions can be conducted seamlessly across banks with limited functional distinction.

While this architectural homogeneity enhances convenience, it simultaneously raises questions about how customers form value judgments and churn propensity in an environment where technological differentiation is muted. This convergence has important behavioral implications. When real-time

system integration and open banking readiness are widely adopted across competing banks, traditional sources of competitive advantage may weaken, shifting the focus to experiential and perceptual factors. Customer experience quality and perceived value may therefore play a more decisive role in shaping churn propensity than structural differences in service architecture alone. However, the existing literature has largely focused on the adoption and use of open banking technologies, with comparatively limited attention to how connected banking architecture can influence customers' intention to switch providers, particularly in contexts characterized by architectural uniformity (Chan et al., 2022; Desiraju et al., 2024).

Positioning within Prior Literature

Prior studies on digital banking have been developed along three streams. The first stream focuses on technology adoption and system quality, emphasizing usefulness, ease of use, reliability, and service efficiency as drivers of digital banking acceptance and satisfaction. The second stream examines open banking from the perspective of regulation, API-based interoperability, data governance, and ecosystem readiness. The third stream investigates customer retention and switching behavior by emphasizing satisfaction, perceived value, trust, switching costs, and alternative attractiveness. Although these streams provide important insights, they remain relatively fragmented. Technology-centered research often assumes that better infrastructure directly increases customer value, while switching behavior studies frequently reshape customers' propensity to leave. In addition, open banking research largely focuses on adoption and readiness translating into perceived value and churn reduction.

This study is positioned at the intersection of these two streams. The study argues that in Indonesia's increasingly standardized and interoperable digital banking ecosystem, real-time system integration and open banking readiness should not be treated as equivalent technological capabilities. Real-time integration may enhance the customer experience, but when it becomes an industry norm, it may lose its power to create a distinctive perceived value. In contrast, open banking readiness reflects a broader ecosystem capability that may function as a more strategic source of customer value and retention.

Research stream	Prior focus	Representative studies	Limitation in prior research	Position of this study
Digital banking adoption and system quality	Usefulness, ease of use, reliability, satisfaction	Oliveira et al., 2016; Tam & Oliveira, 2017; Zhou et al., 2021	Focuses mainly on adoption or satisfaction, not churn in an interoperable ecosystem Often emphasizes adoption, readiness, or perception of open banking, not its role in reducing churn	Examines how real-time integration affects experience and value in digital banking Positions open banking readiness as an ecosystem capability that creates perceived value
Open banking and ecosystem readiness	API, regulation, data governance, interoperability	Iman et al., 2023; Mutambik, 2023; Desiraju et al., 2024; Casolaro et al., 2025	Less attention to how standardized digital infrastructure changes the value formation process Limited	Shows that experience and value mediate the impact of digital architecture on churn
Customer experience and perceived value	Experience quality, service value, loyalty	Lemon & Verhoef, 2016; Becker & Jaakkola, 2020; Saif et al., 2024	Integration of open banking architecture and real-time infrastructure into churn models	Explains churn propensity under low switching barriers and high service parity
Churn and switching behavior	Dissatisfaction, switching cost, alternatives, behavioral intention	Ngau et al., 2023; Bortne et al., 2024; Batmunkh, 2025; Ferreira-Schenk & Dickason-Koekemoer (2022)		

Research Gaps

Although digital banking and open banking have attracted considerable academic attention, important conceptual and empirical gaps remain in the literature, particularly regarding how architectural and experiential factors influence customer behavior.

First, research on real-time system integration has primarily focused on technological enablers and operational benefits, such as efficiency or transaction processing (Sahi et al., 2021; Yadlapalli, 2025; Oleti,

2025; Dinckol et al., 2023), but there is limited empirical investigation into customers' perception of real-time integration and how these perceptions affect downstream outcomes such as value appraisal or switching intention. In other words, while studies highlight the importance of seamless digital services, there is a lack of evidence on how customers interpret the experience of real-time responsiveness as a driver of value or behavioral intention in competitive banking markets.

Secondly, current research on open banking readiness predominantly focuses on regulatory frameworks, implementation phases, or macro-level adoption trends across different regions (Xie & Hu, 2024; Casolaro, 2025). However, there remains a lack of comprehensive studies that conceptualize readiness from the perspective of the customers. Specifically, while readiness indices and governance models delineate the structural preparedness of the open banking ecosystem, they fail to elucidate how open banking readiness interacts with user experience and influences behavioral outcomes.

Third, although customer experience quality has been widely acknowledged as essential in digital banking, its conceptual framework within an interconnected banking ecosystem remains insufficiently developed. A review of digital banking experiences highlights that functional quality, ease of use, and design attributes are key determinants of customer satisfaction (Zhou et al., 2021; Chauhan et al., 2022). However, there is a paucity of empirical research investigating how integrated architectural features are translated into experience quality evaluations, particularly in markets where core digital services are technically similar across various providers.

Fourth, research on perceived value often regards the construct primarily through the lens of economic or utilitarian evaluation (Sahi et al., 2021). However, there is limited understanding of how value perception develops within digitally interconnected environments where emotional and experiential factors are more significant than purely functional distinctions. Although studies on mobile banking emphasize the importance of technology readiness and satisfaction in influencing customer loyalty (Ho et al., 2025), the interaction among real-time system integration, awareness of open banking, and the various facets of perceived value remains insufficiently explored.

Finally, the analysis of switching intention or churn propensity in banking has typically focused on traditional drivers such as dissatisfaction, cost, or relational factors. Research on behavioral predictors, including self-efficacy and perceived control, indicates that non-satisfaction mechanisms can elucidate switching intentions in digitized markets (Ngau et al., 2023; Bortne et al., 2024; Batmunkh, 2025; Ferreira-Schenk & Dickason-Koekemoer, 2022). However, the literature has yet to fully incorporate the connected architecture into models of switching.

Notwithstanding the expanding body of research concerning digital banking, open banking, and customer switching behavior, prior studies have not adequately elucidated the mechanisms through which customer value and churn propensity are established within banking markets where digital infrastructure has become increasingly uniform. The majority of existing research considers system integration and digital readiness as direct sources of enhanced value. However, within the Indonesian banking context, the deployment of real-time payment infrastructure, standardized APIs, and interoperable platforms has diminished the functional disparities among banks. This phenomenon engenders unique theoretical challenges, such as determining what actually drives perceived value and diminishes churn propensity when technological capabilities become ubiquitous across providers. This study seeks to address this gap by investigating whether competitive differentiation shifts from real-time infrastructural capabilities to the readiness of the open banking ecosystem.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Service-dominant Logic

This study uses SDL as the primary theoretical foundation to explain how value emerges within digitally interconnected banking systems. Rather than viewing value as inherent in the technological features or service offered by the institution, SDL posits that value is created through use. In other words, it is the customer who ultimately determines whether a service is valuable (Vargo & Lusch, 2008). Companies do not deliver value in its final form, but they simply offer a value proposition, which customers then realize through their engagement with the service system.

This view is highly relevant to the current banking context. Digital transformation has led to significant infrastructure convergence, with many banks now operating similar real-time systems, interoperable

payment platforms, and standardized API (Application Programming Interfaces). In this environment, technological parity is commonplace. However, despite similar technological architecture, customers do not necessarily evaluate all banks in the same way. Service-Dominant Logic helps explain this paradox: even though institutions use similar technological capabilities, the way customers experience, interpret, and integrate those capabilities into their financial activities can differ significantly. Thus, the source of competitive differentiation shifts from technology ownership to the reality of customer experience.

Connected Banking Architecture from a Service-Dominant Logic Perspective

The concept of connected banking architecture, which encompasses real-time system integration and open banking readiness, aligns with SDL's emphasis on operant resources and resource integration. Operant resources such as knowledge, technological competence, and connectivity enable the exchange of services but do not create value in themselves (Vargo & Lusch, 2016). The value of these resources depends on how effectively they are activated in practice.

In many modern banking markets, real-time transfer, digital wallets, QR-based payments, and open API infrastructure are no longer differentiating innovations but are expected standards. These elements increasingly function as hygiene factors. From an SDL perspective, this does not diminish their importance but rather transforms their role. Architectural integration serves as a platform for the co-creation of value. However, the customers' interaction with the platform, such as the smoothness, coherence, and relevance to everyday financial needs, determines whether value is ultimately perceived. Therefore, connected banking architecture needs to be understood as an enabling mechanism rather than a source of value in itself.

Customer Experience Quality in Value Creation

In SDL, value is created during service use and not before (Vargo & Lusch, 2008). This places the quality of the customer experience at the center of the value creation process. Experience quality reflects how customers evaluate their interactions across various touchpoints such as mobile applications, customer service, payment processes, and cross-platform integration. This evaluation is not only functional but also encompasses ease, clarity, responsiveness, and emotional comfort.

In a connected banking environment, real-time integration and open banking readiness shape how seamless and coherent these interactions are perceived. Instant transaction confirmation, account information synchronization, and seamless interoperability contribute to a sense of control and continuity. However, SDL emphasizes that technological advancement does not automatically result in positive evaluations

Perceived Value as Value – in – Use

Service – Dominant Logic views perceived value as value – in – use, which is the customers' assessment of the received benefit relative to the effort, risk, or sacrifice incurred while using a service. In a digital banking ecosystem where functionality is increasingly similar across providers, perceived value increasingly depends on experiential and contextual aspects, rather than simply objective functional differences.

Real-time integration and open banking readiness have the potential to enhance convenience, transparency, and financial management. However, these advantages are only substantial if customers perceive and experience them as meaningful enhancements. Minor variations in responsiveness or usability can considerably influence perceived value, even when the functional capabilities among banks seem comparable. Consequently, perceived value derives from the cumulative service experience rather than a singular outcome.

Churn Propensity in the Service Ecosystem

Service – Dominant Logic offers valuable insights into customer churn propensity. As active participants in value creation, customers regularly assess whether the current service relationship aligns with their objectives. When the quality of the experience diminishes or the perceived value decreases, customers may reconsider the relationship. Consequently, switching intentions may arise due to discrepancies within the service ecosystem.

In a highly interoperable banking environment, structural barriers to switching are much lower than in traditional banking models. Open systems, standardized transfers, and digital onboarding processes reduce

procedural friction. In such environments, experience factors become increasingly dominant. Customers are more likely to churn when the value they generate with their current provider no longer matches their expectations. Service-Dominant Logic thus explains why switching intention becomes more sensitive to the quality of the experience and perceived value in digitally integrated markets. The implications of SDL for the proposed research framework provide an integrative foundation. SDL explains why real-time system integration and open banking readiness should not be viewed as direct determinants of churn propensity; rather, these elements serve as resource enablers within the service system.

The Relationship between Real-Time System Integration and Customer Experience Quality

The connection between real-time system integration and the quality of customer experience can be elucidated through existing literature on digital service performance and experience assessment. Real-time system integration pertains to the capacity of banking infrastructure to synchronize data, transactions, and services instantaneously across multiple channels without delay or fragmentation. Within the scope of digital banking, the core technical elements—specifically transaction speed, system stability, and platform synchronization—constitute vital components of the service delivery process. When systems function smoothly and without interruption, customers are more likely to perceive the service as efficient and dependable.

A number of empirical studies support this view. Lemon & Verhoef (2016) emphasize that technology-based touchpoints significantly shape the customer journey evaluation, particularly in digitally mediated services. McLean & Wilson (2016) also show that system quality attributes, such as responsiveness and technical performance, positively influence user satisfaction within the environment. In financial services, Marinkovic & Kalinic (2017) found that system efficiency and availability within electronic banking platforms are strong predictors of customer satisfaction and loyalty-related outcomes. These findings suggest that an integrated and responsive technological infrastructure significantly contributes to how customers evaluate their service experience.

At the same time, several other studies caution that the relationship between technological capabilities and experience evaluation is not always straightforward. Becker & Jaakkola (2020) argued that customer experience is shaped by cognitive, emotional, and social responses, not just technical performance. Roy et al. (2017) also found that affective and relational elements often have a stronger influence on overall evaluation than purely functional system characteristics. Hammad et al. (2019) also suggested that technological resources serve as enabling conditions in a broader value creation process, so that infrastructure quality may enhance the experience only if supported by complementary relational and contextual factors.

These perspectives suggest that system integration, even important, does not automatically result in a superior experience unless integrated within a broader experience framework. Overall, prior literature tends to indicate a positive relationship between real-time system integration and customer experience quality, although the strength of this relationship may depend on other experience dimensions. In a digitally interconnected banking ecosystem, where speed, continuity, and seamless interaction are central to daily transactions, real-time integration is expected to play a critical role in shaping customer experience quality.

Nevertheless, prior findings should be interpreted cautiously. Much of the existing literature assumes that system speed, reliability, and integration remain salient sources of customer value. This assumption may not fully apply in banking markets where real-time settlement and cross-channel integration have become widely available. In such markets, customers may treat real-time capability as a minimum service standard. Therefore, this study re-examines whether real-time system integration directly enhances perceived value or whether its role is limited to improving customer experience quality. Thus, based on this notion, we propose the following hypothesis for empirical testing.

H1. Real - time system integration has a positive and significant impact toward customer experience quality

The Relationship between Real-Time System Integration and Perceived Value

The correlation between real-time system integration and perceived value can be comprehended through an analysis of digital service performance and user evaluations of service benefits. Real-time integration pertains to a financial institution's capacity to coordinate transactions, data exchanges, and service features instantly across various channels. When these functionalities are efficiently executed, customers are able to verify balances, execute payments, access third-party services, and finalize daily transactions seamlessly and without delays.

This seamlessness can influence how customers assess the overall benefits provided by a service. Several empirical findings indicate that system performance significantly contributes to customers' assessment of value. Previous research on digital services suggests that system reliability, speed, and accessibility influence perceived usefulness and overall service value (DeLone & McLean, 2016; Santoso et al., 2020; Bagana et al., 2021). In the context of online and mobile banking, system efficiency and technical stability have been shown to enhance customers' perception of functional and economic benefits.

Alalwan et al. (2016) also found that system performance expectations and technical quality positively influence perceived value and adoption intention for digital banking services. These findings suggest that banking platforms that operate smoothly and in real time tend to be perceived as more practical, profitable, and feasible. However, some academic perspectives emphasize that technological capabilities alone do not automatically increase perceived value. The concept of perceived value is often understood as a trade-off between benefits and sacrifices, encompassing emotional, contextual, and relational aspects, not solely technical performance (Ostrom et al., 2015).

In highly digitized service environments, system speed and availability are often considered basic features, rather than value-adding factors (Homburg et al., 2017). Another study by Iman et al. (2023) suggests that trust and relationship aspects can moderate or even outweigh the influence of system characteristics on perceived value. These perspectives suggest that real-time integration can enhance value only if customers perceive increased convenience, control, or quality of service outcomes. Overall, the literature tends to support a positive relationship between real-time system integration and perceived value, although the strength of this influence depends on how customers perceive and interpret the benefits of technology. In the digital banking ecosystem, where interoperability, speed, and seamless access are key elements, real-time integration has the potential to significantly contribute to customers' assessments of overall service benefits. Thus, we propose the following hypothesis for empirical testing below.

H2. Real - time system integration has a positive and significant impact on perceived value

The Relationship between Open Banking Readiness and Customer Experience Quality

Open Banking Readiness refers to a bank's preparedness to build and manage open banking infrastructure, including technological capabilities, API integration, cybersecurity, data governance, regulatory compliance, and strategic alignment with ecosystem partners. From a dynamic capabilities perspective, readiness serves as an advanced capability that enables companies to detect digital opportunities, leverage ecosystem partnerships, and reconfigure service delivery to enhance customer value (Teece, 2018). In a platform-based banking ecosystem, this readiness determines whether open banking becomes a source of experience improvement or a driver of operational disruption.

Customer Experience Quality (CXQ) is a customer's holistic assessment of their interaction with the bank across digital and physical touchpoints, including cognitive and affective aspects. In financial services, CXQ is shaped by perceived service quality, personalization, reliability, usability, and trust (Becker & Jaakkola, 2020). As services migrate to digital channels, organizational and technological readiness become important precursors to quality of experience.

A growing body of empirical research supports the link between digital readiness and improved customer experience. Oliveira et al. (2016) showed that technological readiness increases the perceived usefulness and satisfaction of mobile banking. Iman et al. (2023) found that technological capability and service innovation drive satisfaction and loyalty in digital banking environments. In the context of open banking, Mutambik (2023) reported that system reliability, ease of use, and digital service quality enhance

experience and loyalty intention, indicating that organizational and technological readiness underpins experience outcomes.

Other findings in the banking sector confirm that digital service innovation improves perceived service quality when supported by adequate technological readiness (Chauhan et al., 2022). This suggests that readiness strengthens the service delivery architecture and enables seamless cross-platform integration, which are essential features of open banking. Studies of the fintech ecosystem also confirm that interoperability and secure data governance strengthen trust and the perceived quality of the experience (Chaudhry et al., 2021).

However, this relationship is not always straightforward. Tam & Oliveira (2017) found that perceived ease of use does not always impact behavioral outcomes in mobile banking, suggesting that technological factors alone are insufficient if the value is unclear to customers. Albashrawi & Motiwalla (2019) also showed that cybersecurity concerns can lower ratings of digital service quality, even when the system is robust. These findings suggest that certain readiness components may operate conditionally or indirectly rather than uniformly positively. Overall, the preponderance of evidence suggests that organizational and technological readiness enhance reliability, personalization capabilities, and a sense of control over financial data. In an open banking ecosystem, which demands cross-actor service co-creation, readiness enables seamless, secure, and integrated orchestration of customer journeys. Therefore, banks with a higher level of Open Banking Readiness tend to deliver superior customer experience quality.

Unlike real-time system integration, open banking readiness represents a broader ecosystem capability. Prior studies have examined open banking mainly in relation to adoption, trust, data sharing, and regulatory preparedness. However, less is known about whether customers translate such readiness into perceived value, especially in markets where digital banking services are increasingly similar across providers. This research extends prior work by conceptualizing open banking readiness as an ecosystem-level capability that may become a new basis of value differentiation. Thus, we proposed the following hypothesis to be tested

H3. Open banking readiness has a positive and significant impact on customer experience quality

The Relationship between Open Banking Readiness and Perceived Value

Open Banking Readiness describes a financial institution's ability to build and manage an open banking system. It encompasses the depth of its technological infrastructure, regulatory compliance, data governance practices, and organizational support for partnering with third-party providers. In the service and technology adoption literature, readiness and innovation capability are seen as influencing users' cognitive assessments of the benefits versus burdens of a service. Perceived value refers to customers' overall assessment of a service's utility by weighing what is received, such as functional benefits and convenience, against what is sacrificed, such as time, effort, and risk (Ahn & Lee, 2019).

Evidence from digital financial services supports the view that readiness enhances perceived value for technology-based services. Research on pure-digital banks shows that customers report higher perceived value when service features provide convenience, economic benefits, and trust signals that reduce uncertainty about new offerings (Saif et al., 2024). Specifically, functional ease and economic efficiency increase the perceived value of pure digital banks, while trust and risk dimensions also shape value perceptions (Saif et al., 2024).

In short, when institutions demonstrate readiness through robust and integrated digital infrastructure, customers are more likely to perceive the service as valuable. While studies specifically addressing open banking readiness are still emerging, related research on digital service technology adoption points in the same direction that technology readiness tends to increase perceived value by reducing user effort and increasing perceived usefulness (Karjaluoto et al., 2019). When digital services are perceived as easy to use and their benefits are clear, overall value assessment tends to be higher (Karjaluoto et al., 2019). Combining these findings, open banking readiness through seamless integration, secure data communication, and superior digital features should shift the cost – benefit ratio in a positive direction, thereby increasing perceived value. Thus, we propose:

H4. Open banking readiness has a positive and significant impact on perceived value

The Relationship between customer experience quality and churn propensity

Customer Experience Quality (CXQ) summarizes customers' cognitive and emotional assessment of all interactions with a service provider, including digital interfaces, service personnel, communication channels, and after-sales support (Becker & Jaakkola, 2020). In the financial services sector, CXQ is generally reflected in perceived reliability, personalization, responsiveness, ease of use, and emotional closeness. As competition increases and switching barriers decrease, especially in the digital banking ecosystem, experience quality becomes a key determinant of retention.

Churn propensity refers to the likelihood of a customer terminating their relationship. CP escalates with increasing dissatisfaction, diminishing perceived value, rising attractiveness of competitive alternatives, or weakening of relationship bonds. From a relationship marketing standpoint, customer retention is shaped by evaluations of cumulative experiences. Customers consistently assess whether ongoing interactions continue to justify the relationship (Keiningham et al., 2020). Numerous studies demonstrate that enhanced experiences mitigate churn, as evidenced by Keiningham et al. (2020) and Lemon & Verhoef (2016), who observed that improved customer experiences decreased turnover intentions and promoted greater expenditure within service sectors. Additionally, Lemon & Verhoef (2016) contended that superior experiences bolster engagement and loyalty, thereby diminishing the likelihood of customer attrition.

Matarazzo et al. (2021) showed that CXQ predicts loyalty and reduces switching intentions; Homburg et al. (2017) also found that superior experiences strengthen relationship quality and reduce switching intentions. Mechanistically, a high CXQ builds trust, satisfaction, and psychological commitment, which reduces churn. Omnichannel research also shows that a seamless and integrated journey reduces the probability of churn by increasing convenience and reducing frustration; a fragmented experience does the opposite (Grewal et al., 2017). The impact of CXQ can weaken under certain conditions. Harman et al. (2019) showed that in highly price-sensitive segments, even satisfied customers can switch if the economic incentive is strong, suggesting that experience alone is not always sufficient to prevent customer churn. Based on these contradictions, we propose the following hypothesis to be empirically tested

H5. Customer experience quality has a negative and significant impact on churn propensity

The Relationship between Perceived Value and Churn Propensity

Perceived value is a customer's overall assessment of a service after weighing the benefits received against the cost incurred, such as cost, time, effort, and perceived risk. Perceived value is not solely economic; it combines functional utility, emotional resonance, and relational appreciation. In a competitive financial ecosystem, especially when digital transparency is high and switching barriers are low, customers continually reassess whether their service provider delivers superior net value.

Recent empirical evidence confirms the centrality of perceived value in retention dynamics. Using cross-industry data, Slack & Singh (2020) showed that perceived value has a significantly negative impact on turnover intention beyond the influence of satisfaction. Customers who perceive high functional and relational value are less likely to churn, even in highly competitive markets. Similarly, Konuk (2019) found that perceived value reduces turnover intention by strengthening attitudinal loyalty, thereby stabilizing the existing relationship. Palamidovska-Sterjadovska et al. (2024) reported that perceived value directly increases continuance intentions and indirectly decreases churn behavior through stronger commitment. In technology-based services in general, Liebana-Cabanilas et al. (2018) showed that perceived value predicts resistance to switching, particularly when digital features provide efficiencies and personalized benefits. As perceived value increases, the psychological cost of switching also increases, thus decreasing the likelihood of churn.

Overall, these findings confirm that perceived value serves as a core evaluative filter in the decision to stay or leave. When customers conclude that the benefits of staying outweigh the costs of leaving, churn propensity decreases; conversely, when perceived value weakens due to declining performance, unmet expectations, or superior competitor offerings. Based on these notions, we propose the following hypothesis:

H6. Perceived value has a significant negative effect on churn propensity.

3. RESEARCH METHOD

Research Design

This study employed a quantitative approach with survey-based data collection. The objective was to test a theory-based structural framework examining the relationships among real-time system integration, open banking readiness, and churn propensity. Given that the research objective was to estimate causal relationships and assess the relationships among latent constructs, a quantitative design was deemed appropriate.

To align the research's empirical rigor with the specific requirement of the theoretical framework, a non-probability purposive sampling approach is selected, ensuring that participants possessed requisite familiarity with digital banking operations. The target demographic comprised Indonesian retail bank clients actively utilizing digital conduits, primarily mobile and internet banking platforms. Constructing a probability-based sampling frame proved unfeasible, as comprehensive registries of digital banking clients remain strictly proprietary and dispersed across individual financial entities. Consequently, purposive sampling provided an indispensable mechanism for isolating knowledgeable informants capable of offering informed appraisals of the constructs under scrutiny.

To ensure alignment with the target sample, prospective subjects were vetted against a stringent set of entry thresholds. Eligibility was restricted to individuals who attained legal majority, maintained an active personal banking repository, resided within the urban corridors of Jakarta, Surabaya, Bandung, Semarang, and Yogyakarta, demonstrated a sustained tenure of mobile or internet banking usage spanning at least 2 years, and executed a minimum threshold of ten times within the periods. Non-conforming submissions were systematically excised prior to final dataset curation. These specific locales were designated as deliberate study sites owing to their stature as hubs of dense financial activity and digital adoption. Benefiting from mature telecommunications backbones, sprawling branch networks, and saturated smartphone usage, these hubs foster intense convergence among legacy banks, fintech startups, and payment intermediaries. Such dynamic conditions afford an ideal crucible for probing how users react to real-time system integration and open banking initiatives.

Sampling across this urban arc served to dilute single-market distortion while absorbing a broader spectrum of socioeconomic and professional archetypes among digitally inclined consumers. Nevertheless, this multi-site deployment is not structured to yield a geographically seamless portrait of the archipelago. Accordingly, the insights gleaned ought to be construed as an empirical window onto a digitally engaged cohort within major metropolitan centers rather than a nationwide consensus.

The survey instrument was disseminated through professional networks, alumni registries, specialized digital banking forums, and assorted social media platforms. Consequently, while candidate selection adhered to strict purposive filtering, subject requirements inevitably incorporated elements of opportunistic access to qualified informants. The resulting cohort should therefore be viewed as an illustrative cross-section rather than a strictly generalizable proxy for the broader Indonesian banking clientele.

The questionnaires were distributed online to streamline data collection and expand the respondent reach. The survey link was disseminated through professional networks, alumni associations, digital banking discussion forums, and various social media channels. Before completing the survey, participants were asked to confirm that they actively used digital banking services, in line with the research focus. Respondents were informed that participation was voluntary and anonymous, and confidentiality was maintained to encourage honest and unbiased responses.

Measurement Model Testing

Before estimating the structural paths, the study must verify the accuracy of the measurement model to ensure that each latent construct is adequately represented by its indicators. Because the analysis relied on constructs that were not directly observed and measured through multiple items, establishing reliability and validity was a prerequisite before conducting substantive hypothesis testing.

Internal consistency is evaluated using Cronbach's Alpha and Composite Reliability, supplemented by reporting rho_A. Although alpha is commonly used in behavioral research, composite reliability is preferred

in the context of SEM because it does not assume equal loadings between indicators (Hair et al., 2019). According to established guidelines, a value of >0.70 indicates adequate reliability, while $0.60 - 0.70$ is acceptable in exploratory research (Hair et al., 2019). Additionally, ρ_A is examined to provide more precise estimates of construct reliability (Dijkstra & Henseler, 2015). All constructs exceeded the recommended threshold, indicating adequate internal consistency (Hair et al., 2019; Dijkstra & Henseler, 2015).

Convergent validity was assessed using standardized factor loadings and Average Variance Extracted. A loading above 0.70 indicates that a construct explains more than half of the variance in its indicators (Hair et al., 2019). Similarly, an AVE score >0.50 indicates that, on average, the latent construct absorbs most of the variance in its indicators. (Fornell & Larcker, 1981). The analysis results showed that the retained items loaded significantly on the intended construct, and each construct achieved an AVE above the criterion, thus supporting convergent validity (Hair et al., 2019; Fornell & Larcker, 1981).

Structural Model Testing

After the measurement model is deemed adequate, structural path estimation is performed using partial least squares (PLS) SEM. This stage focuses on testing the model's predictive capability and statistical support for the hypothesized relationship between the constructs (Hair et al., 2019). In line with standard practice, the evaluation includes collinearity diagnostics, path coefficients, coefficient of determination (R^2), and significance testing through bootstrapping (Henseler et al., 2016; Hair et al., 2019).

The direction and strength of the effect are captured using the standardized path coefficient (β). Statistical support is tested using bootstrapping with 5000 resamples, as recommended in the variance-based SEM literature, to obtain t-values and confidence intervals without strict distributional assumptions and appropriate for the context of predictive modeling (Henseler et al., 2016). A path is considered significant if the t-values > 1.96 in a two-tailed test with a 5% significance level (Sarstedt et al., 2020).

Operational Definition

Real-time system integration is defined as the ability of a bank's system to synchronize data, execute transactions, and maintain process continuity in real time across multiple channels without delay or fragmentation, which is reflected in execution speed, cross-platform data consistency, stability, and seamless cross-channel continuity, creating an efficient and reliable experience (Oliveira et al., 2016; McLean & Wilson, 2016; Lemon & Verhoef, 2016; Marinkovic & Kalinic, 2017; DeLone & McLean, 2016).

Sample questionnaire items include "My transaction are processed almost instantly without delay"; "My balance and transaction history are always consistent between the application, the web, and ATMs"; "The application rarely experience disruptions even during peak hours"; "I can continue the process on another channel without having to start over"; and "Uniform interface and user flow across channels" (Oliveira et al., 2016; McLean & Wilson, 2016; Lemon & Verhoef, 2016; Marinkovic & Kalinic, 2017; Homburg et al., 2017).

Open banking readiness refers to an organization's readiness to build and manage open banking infrastructure, including application programming interface quality, security, clarity of data access consent flows, data governance, regulatory compliance, and the ability to partner with third parties. From a dynamic capabilities perspective, this readiness enables banks to detect digital opportunities, leverage ecosystem partnerships, and reconfigure service delivery (Teece, 2018; Xie & Hu, 2024; Casolaro et al., 20125; Albashrawi & Motiwalla, 2019; Alalwan et al., 2016; Mutambik, 2023; Chaudhry et al., 2021; Iman et al., 2023). Sample questionnaire items are "This bank's integration with third-party applications feels seamless and stable"; "The data access approval process is clear and convincing"; "The bank provides adequate control over the use of my data"; "This bank's open banking practices comply with applicable regulations"; "Banks are proactive in collaborating with digital financial service providers" (Xie & Hu, 2024; Casolaro et al., 2025; Albashrawi & Motiwalla, 2019; Alalwan et al., 2016; Mutambik, 2023; Chaudhry et al., 2021; Iman et al., 2023).

Customer experience quality is a holistic assessment of customers across all touchpoints, such as application, web user interface, service personnel, communication channels, and after-sales support, which generally encompasses reliability, relevance, personalization, responsiveness, ease of use, and security during transactions (Becker & Jaakkola, 2020; Homburg et al., 2017; Lemon & Verhoef, 2016; McLean &

Wilson, 2016; Zhou et al., 2021). Items will be used are “This bank’s service are reliable at all times”; “The recommendations i received met my needs”; “Responses to complaints were prompt and provided solution”; “Application navigation is easy to understand”; “I feel comfortable and safe when using this bank’s digital services” (Becker & Jaakkola, 2020; Homburg et al., 2017; Lemon & Verhoef, 2016; McLean & Wilson, 2016; Zhou et al., 2021; Mutambik, 2023).

Perceived value reflects a customer’s overall assessment of the benefits, such as functional, usefulness, convenience, economic efficiency, and time-saving relative to the sacrifices, such as cost, time, effort, and perceived risk of using the service. In a transparent and competitive digital ecosystem, this perceived net value determines whether to stay or switch (Ahn & Lee, 2019; Karjaluoto et al., 2019; Oliveira et al., 2016; Saif et al., 2024; Palamidovska-Sterjadovska et al., 2024). The items used are: “This bank’s features help me manage my finances”; “This service saves me time and energy”; “The cost of the service is commensurate with the benefits I receive”; “This service reduces my concerns about fraud”; “Overall, this bank’s service provides more value than other alternatives” (Karjaluoto et al., 2019; Oliveira et al., 2016; Saif et al., 2024; Palamidovska-Sterjadovska et al., 2024; Ahn & Lee, 2019).

Finally, churn propensity is a customer’s tendency to end their relationship with a bank and switch to another provider. Indicators include switching intentions, searching alternatives, the probability of closing a primary account within 6-12 months, vulnerability to competitors’ incentives, and attrition, which is widely discussed in the digital financial services switching and churn literature (Keiningham et al., 2020; Lemon & Verhoef, 2016; Matarazzo et al., 2021; Grewal et al., 2017; Harman et al., 2019). The items used are “I tend to switch to another banks in the next 6-12 months”; “I have been actively comparing offers from other banks recently”; “I am quite likely to close my primary account with this bank”; “If there are more attractive incentives, i would switch”; “My attraction to this bank is declined compared with last year” (Keiningham et al., 2020; Lemon & Verhoef, 2016; Matarazzo et al., 2021; Grewal et al., 2017; Harman et al., 2019).

4. DATA ANALYSIS AND DISCUSSION

Demographics of Respondents

The study obtained 187 valid responses from retail banking customers who actively used digital channels, such as mobile banking applications and internet banking. This sample size was sufficient for SEM estimation on a model with multiple constructs and observed indicators. All respondents passed the eligibility questions embedded at the beginning of the questionnaire, and no submitted questionnaire contained substantial missing data. Nevertheless, because respondents’ activity is assessed through self-reported screening questions, the study could not independently verify actual transaction records.

Based on educational background, 92 respondents held a bachelor ’sdegree, 39 respondents held a master ’sdegree, 28 respondents completed a diploma program, 21 respondents graduated from senior high school, and 7 respondents held a doctoral degree. This distribution suggests that most participants had adequate educational exposure to comfortably engage with digital financial services.

In terms of occupation, the sample included 74 private-sector employees, 33 entrepreneurs, 29 government employees, 24 professionals, and 27 students. This variation reflects diverse financial behaviors and decision-making tendencies among respondents. The presence of both new and existing customers enables a broader understanding of churn trends. Data collection was conducted in five major cities in Indonesia: Jakarta, Surabaya, Bandung, Semarang, and Yogyakarta. These regions were selected based on their economic significance, digital banking penetration rate, and active fintech ecosystems. The relatively advanced telecommunications infrastructure in these cities supports real-time financial transactions and open banking initiatives, making them an appropriate context for examining technology integration and ecosystem readiness. Furthermore, selecting several metropolitan areas increased the diversity of socioeconomic characteristics in the sample while maintaining relevance to a digitally mature banking environment.

Validity and Reliability

Before conducting further analyses, it is essential to evaluate the reliability and validity of the reflective measurement model. The outer loading evaluation aims to assess the convergent validity of the indicators with respect to the latent construct. In the PLS-SEM approach, an indicator is considered to have convergent validity if its loading value is >0.70. However, values below this are acceptable in new model development research, as long as the reliability and Average Variance Extracted value still meet the criteria (Hair et al., 2019; Sarstedt et al., 2020). For the Real-Time System Integration construct, most indicators showed adequate

loading values, ranging from 0.731 to 0.762. These values exceed the 0.70 threshold, so all indicators can be declared valid. For Open Banking Readiness, the outer loading values ranged from 0.607 to 0.878, indicating that each indicator reflected its own latent construct.

Although the outer loading for sys3 was 0.552, which fell below the conventional 0.70 benchmark value, the item was deliberately retained. It operationalized system stability during peak transaction surges, a vital nuance in user perception of real-time banking operations. Furthermore, the overarching Real-time System Integration construct preserved robust convergent validity and internal consistency, yielding a composite reliability of 0.838 and an AVE of 0.551. Pruning sys3 yielded no discernible shift in the structural model's core empirical inferencing; hence, its retention was preserved to safeguard the construct's content validity.

Furthermore, the Customer Experience Quality construct also demonstrated strong performance, with loading values ranging from 0.687 to 0.887. Although one indicator fell below 0.70, it is still within the acceptable tolerance limits, demonstrating strong convergent validity. Furthermore, the majority of indicators in the perceived value construct are above 0.70, while indicator val4 is below the threshold but still acceptable. Finally, the Churn Propensity construct had loading values ranging from 0.692 to 0.847 for all five indicators. Similar to the previous construct, one indicator, churn3, had a value of 0.692, which was slightly below 0.70 but still acceptable for use in this research. In the context of predictive models, overall construct consistency is prioritized over the aggressive removal of indicators (Shmueli et al., 2019).

Table 1 Outer Loading

Item	Real Time System Integration	Open Banking Readiness	Customer Experience Quality	Perceived Value	Churn Propensity
sys1	0.750				
sys2	0.758				
sys3	0.552				
sys4	0.762				
sys5	0.731				
open1		0.764			
open2		0.607			
open3		0.878			
open4		0.726			
open5		0.823			
exp1			0.822		
exp2			0.687		
exp3			0.730		
exp4			0.808		
exp5			0.887		
val1				0.867	
val2				0.722	
val3				0.802	
val4				0.668	
val5				0.836	
churn1					0.723
churn2					0.730
churn3					0.692
churn4					0.725
churn5					0.847

Source: Data Processed (2026)

Construct reliability and validity were also evaluated using Cronbach's alpha, composite reliability, and average variance extracted (AVE) values. Based on the test results presented in Table 2, all the constructs in this study met the internal reliability criteria. The real-time system integration construct had a Cronbach's alpha value of 0.759 and a composite reliability value of 0.838, indicating good internal consistency.

Furthermore, the AVE value of 0.551 exceeded the minimum threshold of 0.50, indicating that this construct could explain more than 50% of the variance in its indicators and met the convergent validity.

The Open Banking Readiness construct demonstrated higher reliability, with a Cronbach's alpha value of 0.817 and a composite reliability value of 0.874. Furthermore, the AVE value of 0.586 indicates that this construct has adequate explanatory power for the indicators. Thus, Open Banking Readiness can be declared reliable and valid. Furthermore, the Perceived Value construct has a Cronbach's alpha value of 0.839 and a composite reliability of 0.887, indicating strong internal consistency. The average variance extracted value of 0.612 indicates a better ability to explain indicator variance compared to the previous two constructs. This proves that the indicators used provide a solid representation of the Perceived Value construct in this study.

The Customer Experience Quality construct recorded the highest reliability value among all constructs used in this research, with a Cronbach's Alpha of 0.847 and a composite reliability of 0.892. The AVE value of 0.624 indicates that more than 62% of the indicator variance is explained by the latent construct, indicating good convergent validity. Methodologically, these values reflect a strong and stable measurement structure.

Finally, the Churn Propensity construct has a Cronbach's alpha value of 0.799 and a composite reliability value of 0.861. Both values are above the recommended threshold. The average variance extracted (AVE) was 0.555, meeting the minimum criteria. Therefore, this construct is considered to meet the criteria for convergent validity. Although its reliability is slightly lower than that of the previous construct, it remains in the good to acceptable range.

Table 2 Reliability and Validity Test Result

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Real Time System Integration	0.759	0.838	0.551
Open Banking Readiness	0.817	0.874	0.586
Perceived Value	0.839	0.887	0.612
Customer Experience Quality	0.847	0.892	0.624
Churn Propensity	0.799	0.861	0.555

Source: Data Processed (2026)

Table 3 delineates the HTMT ratio estimates compiled to assess the discriminant validity across the five model constructs. The majority of HTMT estimates fell below the conservative 0.90 ceiling, ranging from 0.727 to 0.901, signaling adequate empirical distinctiveness for most paired dimensions. However, several inter-construct ratios hovered near the threshold, such as Customer Experience Quality and Churn Propensity (0.894), Customer Experience Quality and Open Banking Readiness (0.899), and Churn Propensity and Open Banking Readiness (0.864). These elevated values stem from the inherent conceptual proximity connecting user appraisal of digital infrastructure, overall service experience, and switching inclinations.

Notably, the ratio between Open Banking Readiness and Real-time System Integration was 0.901, slightly exceeding the prescribed benchmark. This modest inflation hints at empirical overlap, given that both dimensions tap into overarching themes of connectivity, system interoperability, and fluid service delivery. Nevertheless, the pair retains theoretical divergence; real-time system integration captures internal architecture centered on transaction speed, data synchronization, stability, and cross-channel continuity, whereas Open Banking Readiness denotes an outward-facing ecosystem capability encompassing API architecture, third-party collaboration, governance, consent frameworks, and compliance.

Table 3 Heterotrait - Monotrait Ratio

Construct	Churn Propensity	Customer Experience Quality	Open Banking Readiness	Perceived Value	Real Time System Integration
Churn Propensity					
Customer Experience Quality	0.894				
Open Banking Readiness	0.864	0.899			
Perceived Value	0.727	0.820	0.748		
Real-time System Integration	0.765	0.801	0.901	0.841	

Source : Data Processed (2026)

The HTMT value linking Churn Propensity to Perceived Value was 0.727, while the corresponding figure for Churn Propensity and Real-Time System Integration was 0.765. Sitting comfortably beneath the

0.90 threshold, both metrics confirm that Churn Propensity retains sharp empirical distinctiveness from both Perceived Value and Real-Time System Integration. These findings substantiate the theoretical demarcation separating how customers appraise banking utility, perceive technical integration, and their underlying inclination to migrate to rival providers.

The HTMT metric linking Customer Experience Quality to Open Banking Readiness registered at 0.899. Although this figure technically rests below the 0.90 ceiling, its proximity highlights significant conceptual and empirical proximity. Such alignment is predictable given that an institution’s open banking architecture, which encompasses third-party API connectivity, data-sharing protocols, security, and systemic interoperability, inevitably colors how users evaluate their service interactions. Meanwhile, the HTMT value between Customer Experience Quality and Perceived value reached 0.820, alongside a reading of 0.801 for Customer Experience Quality and Real-time System Integration. Settling comfortably under the 0.90 cutoff, both coefficients affirm empirical demarcation across these latent dimensions.

The HTMT coefficient linking Open banking Readiness to perceived Value stood at 0.748, confirming that these latent dimensions maintain sufficient empirical divergence. While an institution’s open banking architecture can undoubtedly amplify the utility users derive from its services, open banking readiness denotes a bank’s technological infrastructure and ecosystem adaptability, whereas perceived value registers a consumer’s calculus of realized benefits against accrued cost, liabilities, and friction. Consequently, the 0.748 reading substantiates the theoretical boundaries separating institutional preparedness from user-appraised utility.

However, the HTMT value between Open Banking Readiness and Real-time System Integration was 0.901. This value marginally exceeds the recommended threshold of 0.90 and indicates a potential discriminant-validity concern. The overlap may arise because both constructs contain elements related to technology connectivity, system integration, interoperability, and seamless digital service delivery. Nevertheless, the two constructs remain theoretically different. Real-time System Integration represents the bank’s internal operational capability to provide instant transactions, synchronized data, stable systems, and continuity across banking channels. In contrast, Open Banking Readiness represents the bank’s external ecosystem capability, including API integration, third-party collaboration, data governance, clients’ consent, cybersecurity, and regulatory compliance.

On balance, the HTMT diagnostics offer broad, albeit non-exhaustive, endorsement of discriminant validity. Nine of the ten inter-construct dyads comfortably clear the 0.90 hurdle; only the nexus between Open Banking Readiness and Real-Time System Integration slightly breaches the prescribed threshold. Consequently, the narrative ought to frame discriminant validity as substantially supported rather than unequivocally established. Supplementary probing via bootstrapped HTMT confidence intervals and cross-loading matrices remains prudent to ascertain whether these two dimensions maintain genuine empirical divergence. Should the bootstrapped interval surrounding the 0.901 estimate exclude unity (1.00), retaining both constructs remains defensible, though the finding warrants a nuanced and cautious interpretation.

Structural model results

The evaluation of the structural model in PLS SEM aimed to test the significance of the relationships between hypothesized latent constructs. Each relationship was tested using the bootstrapping method and declared significant if the t-statistic value was > 1.96 , at a 5% significance level, and the p-value was < 0.05 (Hair et al., 2019; Sarstedt, 2020).

Table 4. Path Analysis Result

Path	T Statistics (O/STDEV)	P Values
Real Time System Integration --> Customer Experience Quality	3.935	0.000
Real Time System Integration --> Perceived Value	0.819	0.413
Open Banking Readiness --> Customer Experience Quality	5.360	0.000
Open Banking Readiness --> Perceived Value	41.462	0.000
Customer Experience Quality --> Churn Propensity	5.619	0.000
Perceived Value --> Churn Propensity	6.640	0.000

Source: Data Processed (2026)

Based on the test results, the relationship between real-time system integration and customer experience quality showed a t-statistic value of 3.935 with a p-value of 0.000. This value exceeds the threshold of 1.96. Therefore, the hypothesis that real-time system integration influences customer experience quality is accepted. This finding indicates that the system's ability to process transactions instantly and integratedly significantly improves the quality of the customer experience. However, the relationship between real-time system integration and perceived value had a t-statistic of 0.819 and a p-value of 0.413. This value is well below the required significance limit. This means that real-time system integration does not significantly impact customer-perceived value. Therefore, while a fast and integrated system can improve the customer experience, this does not necessarily translate directly into perceived value.

Furthermore, the relationship between Open Banking Readiness and Customer Experience Quality showed a t-statistic of 5.360 and a p-value of 0.00. These results also demonstrate that banks' readiness to implement open banking significantly improves the quality of the customer experience. Technological readiness, data security, and API integration also help shape customer perceptions and improve their experience.

The relationship between Open Banking Readiness and Perceived Value even showed a very high t-statistic of 41.462 with a p-value of 0.000. This is a strong and significant relationship. This indicates that open banking readiness directly and substantially improves customers' perceived value. In other words, a bank's ability to build an open and integrated ecosystem significantly determines how customers evaluate the relative benefits they perceive.

In the next step, the relationship between Customer Experience Quality and Churn Propensity showed a t-statistic of 5.619 with a p-value of 0.000, with a negative value in the original sample. Therefore, it can be understood that the better the customer experience, the lower the intention to switch from that bank. The final relationship was between Perceived Value and Churn Propensity, which showed a t-statistic of 6.640 with a p-value of 0.000, and the original sample also had a negative value. This also means that the higher the customer's perception of value, the lower the likelihood of switching to another bank.

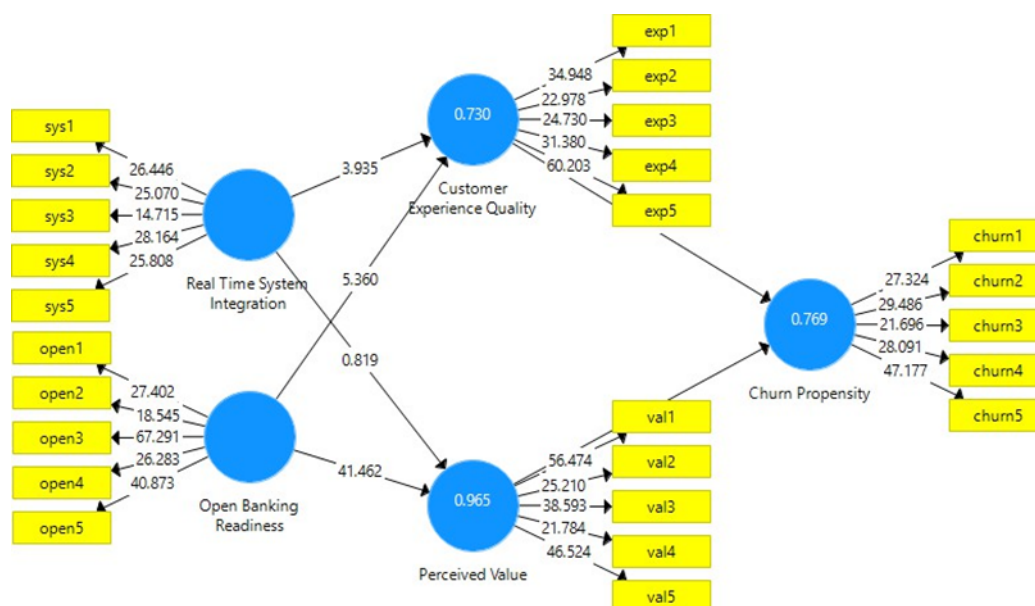


Figure 1. Research Model

Discussion

Real-time System Integration and Customer Experience Quality Relationship

The results show that real-time system integration has a positive and significant effect on customer experience quality. This finding indicates that when banking systems can process transactions instantly, synchronize customer data across channels, and provide stable digital service continuity, customers tend to evaluate their banking experience more positively. This result is consistent with prior studies suggesting that system responsiveness, reliability, and technical performance are important determinants of customer

experience in digital service environments. Lemon & Verhoef (2016) emphasized that technology-based touchpoints shape the customer journey, whereas McLean and Wilson argued that system quality and responsiveness influence online customer experience. Similarly, Marinkovic & Kalinic (2017) found that efficiency and availability in electronic banking platforms contribute to satisfaction and loyalty-related outcomes.

In the context of the Indonesian banking industry, this finding is particularly relevant because digital banking customers increasingly rely on mobile banking, internet banking, real-time transfer, and cross-channel transaction services. The development of national payment infrastructure, including real-time settlement and interoperable payment systems, has raised customers' expectations for seamless, uninterrupted digital banking services. Thus, real-time system integration improves customer experience because it reduces friction, delay, and uncertainty during financial transactions.

From the SDL perspective, real-time system integration functions as an operant resource that enables value co-creation between banks and customers. However, value does not emerge from the technology itself but from how customers experience it in daily banking activities. Therefore, support for H1 confirms that an integrated and responsive banking infrastructure remains important for shaping the quality of the customer experience in a digitally connected banking ecosystem.

Real-time System Integration and Perceived Value Relationship

The results show that real-time system integration does not significantly affect perceived value. This finding suggests that although real-time system integration improves customer experience, it does not always increase customers' overall perception of value. This result differs from several earlier studies that link system quality, speed, reliability, and accessibility with perceived usefulness and perceived value in digital banking and mobile financial services. Previous studies such as DeLone & McLean (2016), Tam & Oliveira (2017), and Alalwan et al. (2016) generally suggest that strong system performance can improve customers' evaluation of digital service benefits. However, the present finding indicates that this relationship may depend on the maturity and standardization of the banking ecosystem.

In the Indonesian banking context, real-time system capability has increasingly become a basic service rather than a distinctive source of customer value. As banks adopt similar real-time payment infrastructure, mobile banking functions, and interoperable platforms, customers may no longer perceive transaction speed and system integration as special benefits. Instead, they may regard these features as minimum requirements that every bank should provide. This explains why real-time system integration significantly improves the experience quality but does not directly enhance the perceived value.

This finding provides an important theoretical insight, suggesting that digital infrastructure can become commoditized when it is widely adopted across competing banks. In such situations, technology serves as a value-enabling condition rather than a direct value-creating factor. Therefore, rejecting H2 does not mean that real-time system integration is unimportant. Rather, it indicates that in a technologically homogeneous banking market, real-time integration has become a hygiene factor that supports experience but is insufficient to differentiate perceived value.

Open Banking Readiness and Customer Experience Quality Relationship

The results show that open banking readiness has a positive and significant effect on customer experience quality. This indicates that banks with greater readiness in API integration, data governance, security, regulatory compliance, and third-party collaboration are better positioned to deliver better customer experiences. This finding is consistent with previous research on open banking and digital financial services. Mutambik (2023) found that system reliability, ease of use, and digital service quality influence customer experience and loyalty intention in open banking. Briones de Araluze and Cassinello Plaza (2023) also emphasized the importance of interoperability and digital trust in fintech adoption, while Iman et al. (2023) highlighted the relevance of open banking in improving customer experience in Indonesia. These studies support the argument that open banking readiness strengthens the quality of digital service delivery.

In Indonesia's banking landscape, open banking readiness is increasingly important because banks no longer operate in isolation. They are becoming part of a broader digital ecosystem involving fintech firms,

e-wallet providers, payment platforms, merchants, and third-party financial service providers. Customers expect banking services to be connected with other digital services in a seamless, secure, and convenient manner. Therefore, when banks manage open banking integration, customers experience smoother interactions across platforms.

From a dynamic capabilities perspective, open banking readiness reflects a bank's ability to sense digital opportunities, seize ecosystem partnerships, and reconfigure service delivery. This capability allows banks to create more integrated and customer-oriented service journeys. Therefore, support for H3 confirms that customer experience in modern banking is determined not only by internal system quality but also by the bank's readiness to participate effectively in an open and collaborative financial ecosystem.

Open Banking Readiness and Perceived Value Relationship

The results show that open banking readiness has a positive and significant effect on perceived value. Among the relationships tested in this study, this path demonstrates one of the strongest empirical effects, indicating that open banking readiness is a major determinant of customers' evaluation of the value of digital banking services. Karjaluoto et al. (2019) argued that perceived value in mobile financial services is shaped by usefulness, convenience, economic benefits, trust, and functional advantages. In addition, open banking research, such as Mutambik (2023), Desiraju et al. (2024), and Casolaro et al. (2025), highlights the importance of open banking infrastructure, data access, and digital service quality in shaping customer evaluations.

In the Indonesian landscape, this finding is highly meaningful because the banking industry is moving forward to greater interoperability and ecosystem integration. Customers increasingly value not only fast transactions but also secure data sharing, transparent consent mechanisms, access to broader financial services, and integration with third-party platforms. Open banking readiness gives customers a sense of control, convenience, and expanded financial utility. These benefits directly increase perceived value because customers feel that the bank provides more than basic transaction services.

This finding strengthens the central contribution of the research. While real-time system integration does not directly improve perceived value, open banking readiness does. This means that the source of value in digital banking is shifting from infrastructure-based capability to ecosystem-based capability. In other words, customers no longer evaluate banks only based on speed and reliability, but also based on how well banks connect them to a broader, secure, and useful financial ecosystem. Thus, H4 confirms that open banking readiness is becoming a strategic source of customer value in Indonesia's digital banking industry.

Customer Experience Quality and Churn Propensity Relationship

The results indicate that the quality of customer experience exerts a significant negative influence on the propensity to churn. This implies that an enhanced customer experience correlates with a decreased likelihood of customers switching to alternative banking institutions. Such findings align with prior research on customer experience. Lemon and Verhoef (2016) posited that the customer journey's experiences impact engagement and loyalty. Becker and Jaakkola (2020) further emphasized that customer experience is constituted by cognitive, emotional, and behavioral responses to service encounters. In the context of banking and service industries, Keiningham et al. (2020), Matarazzo et al. (2021), and Homburg et al. (2017) similarly demonstrated that positive experiences reinforce relationship quality and diminish the intention to switch.

In the context of Indonesian digital banking, customer experience holds particular significance due to the decreasing barriers to switching. Consumers can effortlessly compare digital banking services, open accounts via mobile applications, transfer funds in real-time, and access alternative financial services through fintech platforms. As banking services become increasingly interoperable, customers face fewer traditional administrative obstacles. Consequently, the quality of the customer experience emerges as a critical psychological barrier to customer churn.

The support for H5 indicates that banks must focus not only on technological infrastructure, but also on the overall quality of the customer journey. Reliable applications, responsive complaint handling, easy navigation, personalization, and perceived security all contribute to a better experience. When customers feel that their interactions with banks are smooth, secure, and relevant to their needs, they are less likely to

consider switching. Therefore, customer experience quality functions as a retention mechanism in the modern digital banking industry.

Perceived Value and Churn Propensity Relationship

The results demonstrate that perceived value negatively influences churn propensity. This observation indicates that customers who perceive greater value from their current banking institution are less inclined to switch to an alternative provider. The findings corroborate previous research suggesting that perceived value is a fundamental determinant of loyalty, continuance intention, and reduced switching behavior. Slack & Singh (2020) established that perceived value enhances customer loyalty and diminishes turnover intentions. Palamidovska-Sterjadovska et al. (2024) determined that perceived value elevates continuance intention within the mobile banking sector, while Karjaluoto et al. (2019) highlighted that perceived value propels the utilization of mobile financial services. These findings substantiate the proposition that customers tend to remain with a service provider when they perceive that the benefits received outweigh the associated costs, risks, and efforts involved.

In the Indonesian banking sector, perceived value has emerged as a crucial bulwark against customer defections. Account holders navigate a crowded field of choices, flanked by legacy institutions, nimble digital banks, emerging fintech platforms, and ubiquitous e-wallet ecosystems, each vying to deliver seamless, cost-effective, and deeply integrated financial tools. When an institution cultivates a conviction of genuine utility that provides not only transactional convenience but also tangible time savings, granular financial oversight, robust security, and seamless ecosystem integration, it erects a high psychological barrier to exit. Conversely, if a client senses that a competing provider offers a far richer yield of advantages for a comparable expenditure of effort, their propensity to abandon the platform increases sharply.

This result bolsters the premise that perceived value eclipses mere customer experience in scope. Where experience captures the cadence of discrete interactions, perceived value registers a holistic calculus of returns against expenditure. Across an interoperable banking terrain, where digital offerings often dissolve into functional parity, perceived value stands as the ultimate arbiter of retention. Consequently, the affirmation of H6 obliges the institution to perpetually fortify its value proposition, looking beyond incremental feature upgrades to ensure that clients vividly appreciate the tangible dividends of steadfast loyalty.

In summary, these findings indicate that the competitive advantage in Indonesian digital banking has shifted from a sole focus on technical infrastructure to an ecosystem-driven utility. While seamless, real-time backend integration remains the fundamental expectation that ensures operational excellence, it no longer provides a distinctive perceived value once it becomes standard practice. Conversely, readiness for open banking significantly influences both user experience and perceived value, thereby demonstrating an institution's agility within a broader, secure, and interconnected financial network. Ultimately, since exceptional user experiences and high perceived value substantially reduce customer defection rates, customer retention in environments free from traditional transaction limitations depends more on the benefits offered and overall engagement rather than on technological infrastructure alone.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Conclusions

This study aimed to analyze the influence of real-time system integration and open banking readiness on churn propensity, considering the role of customer experience quality and perceived value within the context of Indonesian digital banking. The findings demonstrate that real-time system integration substantially affects the quality of the customer experience but does not directly impact perceived value. Conversely, open banking readiness has been shown to significantly influence both customer experience quality and perceived value, with a notably strong impact on perceived value. Furthermore, both customer experience quality and perceived value are found to have a significant negative effect on churn propensity, indicating that improvements in experience and perceived value are associated with a reduced tendency for customers to switch banks.

Theoretical Contribution and Novelty

This study offers three principal contributions to the fields of accounting and business, particularly within the context of digital banking transformation and customer retention. Firstly, it enhances the discourse on digital banking by shifting the analytical focus from technology adoption to competitive differentiation in the face of technological convergence. While prior research has mainly investigated whether customers adopt or accept digital banking technologies, this study explores how customers evaluate and their likelihood of switching, especially when the underlying digital banking infrastructure has become increasingly uniform across competing banks.

Secondly, this research advances service-dominant logic by illustrating that the integration of real-time systems does not inherently generate perceived value when such capability has become standard within the industry. The negligible impact of real-time system integration on perceived value indicates that technological infrastructure is progressively serving as a resource that enables value, rather than providing direct value itself. Instead, value is primarily realized through customer experience and the orchestration of services within the ecosystem.

Third, this research contributes to the dynamic capabilities perspective by positioning open banking readiness as an ecosystem-oriented capability that enables banks to create customer value in an interoperable market. The strong effect of banking readiness on perceived value indicates that competitive advantage in digital banking may increasingly depend on banks' ability to manage API connectivity, data governance, third-party collaboration, and customer trust, rather than merely improving transaction speed or system reliability.

The primary innovation of this research resides in illustrating that within a highly interoperable and increasingly homogeneous banking environment, competitive advantage is no longer predominantly derived from real-time infrastructure capabilities. Rather, it is determined by the readiness of the ecosystem, specifically the capacity of banks to manage open banking interfaces, data governance, cross-platform collaboration, and customer-perceived control. This finding contributes to the existing digital banking scholarship by demonstrating that while technological integration can enhance customer experience, ecosystem readiness plays a more pivotal role in generating perceived value and mitigating churn propensity.

Practical Implications

The findings provide several practical implications for banks operating in an increasingly integrated digital financial ecosystem. The significant effects of open banking readiness on customer experience quality and perceived value indicate that open banking should not be managed solely as an information technology project. Instead, banks should treat it as an organizational and ecosystem capability that requires coordinated involvement from information technology, cybersecurity, risk management, compliance, legal, customer experience, and business development functions. Such coordination is necessary to ensure that technological integration produces benefits that are visible and meaningful to customers.

First, financial institutions ought to institute a formal application programming interface (API) governance framework. This blueprint must explicitly delineate API stewardship, architecture standards, access authorization, documentation requirements, version control, testing protocols, service-level covenants, and incident-response duties. Banks should likewise curate a centralized API repository and developer portal equipped with standardized technical documentation, authentication prerequisites, integration blueprints, and sandbox environments for vetted third-party vendors. API performance warrants persistent telemetry tracking metrics, such as latency, uptime, transaction throughput, error frequency, and mean time to resolution. Although end users rarely inspect backend API telemetry directly, they invariably feel its repercussions through transaction continuity, operational reliability, and frictionless interoperability across third-party platforms.

Second, banks should strengthen data security and privacy protection across the open banking ecosystem. This can be achieved through strong authentication mechanisms, encryption of data in transit and at rest, role-based access control, real-time monitoring of suspicious activities, periodic vulnerability assessments and clearly documented incident-response procedures. Security assessments should not be limited to banks' internal systems but should also cover third-party providers connected to banking

platforms. Therefore, banks should conduct cybersecurity and privacy due diligence before granting API access and periodically reassess each partner's compliance and security performance. These measures are essential because a security weakness in a third-party system can negatively affect customer trust in the bank and reduce the value customers associate with open banking services.

Third, institutions must architect an intuitive, user-centric consent-management protocol. Prior to soliciting data-sharing authorizations, banks ought to clearly disclose the specific data telemetry accessed, recipient entities, underlying purpose, authorization longevity, and straightforward revocation mechanisms. These disclosures should be framed in succinct, lucid prose rather than buried within labyrinthine legal codices or esoteric technical jargon. Furthermore, deploying an interactive consent console enables clients to audit active permissions, inspect data access logs, recalibrate sharing preferences, and rescind access without bureaucratic friction. Automated alerts should trigger whenever consent is conferred, renewed, altered, or terminated. By establishing transparent data stewardship, banks cultivate a heightened sense of user sovereignty over personal financial assets, thereby fortifying foundational trust and customer-perceived utility.

Limitation and Future Research

This study has several limitations that should be considered when interpreting the findings. First, the limitations are related to the sample size and scope. This study involved only 187 respondents from major cities in Indonesia with relatively high levels of digital banking adoption. This means the results do not fully reflect customer behavior in non-metropolitan areas, which have varying levels of digital literacy and access to technology. Second, this study used a cross-sectional approach, thus failing to capture the dynamics of changes in customer perception and behavior over time. In fact, in a rapidly evolving digital banking ecosystem, factors such as customer experience and perceived value are highly likely to change dynamically. Furthermore, this study focused on the context of digital banking in Indonesia, which has relatively homogeneous regulatory and infrastructure characteristics. Therefore, generalizing the research results to other countries or different specific sectors requires caution.

Based on this limitation, future research is recommended to develop a longitudinal approach to capture the changes in customer behavior more dynamically, particularly in understanding the evolution of churn propensity over time. Furthermore, comparative studies across countries or across different types of institutions are crucial to test whether the role of open banking readiness and perceived value is universal or contextual. Further research is also expected to enrich theory development and provide broader implications to understand the dynamics of customer behavior in the era of an increasingly integrated digital banking ecosystem.

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