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Bridging digital bank and e-commerce: A study on customer experience and reuse intention in integrated digital payment system

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Abstract: The emerging growth digital application has driven ecosystems integrating digital banks and e-commerce platforms, enabling seamless, efficient transactions. This study examines the impact of user experience and satisfaction on reuse intention in this integrated environment. Using a mixed-method approach, data were collected through surveys of 471 respondents and interviews with 30 participants. Quantitative data were analyzed using structural equation modeling, while qualitative data were processed through content analysis. Results show that perceived ease of use, usefulness, reliability, value, and risk significantly affect user experience, while perceived security does not. These findings aim to help digital banks and e-commerce platforms design effective CRM strategies to enhance satisfaction and reuse intention.

Keywords: digital bank; e-commerce; financial technology; user experience; CRM

1. Introduction

The digital era has significantly impacted the banking sector, leading to the rise of digital banking, defined as a bank operating entirely online without physical branches (Chauhan et al., 2022). Digital bank users now have personal access to their accounts, enabling them to transfer funds, check transactions, pay bills online, and conduct transactions anytime and anywhere (Andrew Susanto et al., 2023; Xue et al., 2011; Yoon and Barker Steege, 2013). A global survey shows the rapid growth of digital banking, with projections estimating that 39% of the population, or approximately 74.8 million users, will adopt digital banking by 2026 (Jayani, 2021). Despite this growth, Indonesia remains the third-largest country globally in terms of unbanked population, with a financial literacy index of only 40% (Wiradharma, 2022).

Due to its convenience, digital banking has been adopted by the Indonesian government to reduce the unbanked rate and support the digital economy. The value of digital banking transactions in Indonesia increased by 38.38% in October 2022 (Respati, 2023). This growth aligns with broader global trends as digitalization transforms consumer behavior and forces banks to digitize their processes. The proliferation of digital banks in Indonesia has created intense competition, encouraging banks to innovate and build digital ecosystems. One of the most ideal digital ecosystems for digital banks is e-commerce platforms (Financial Services Authority, 2022) as it has become a major driver of Indonesia's digital economy, contributing significantly to the growth of digital banking and boosting bank profitability (Antara, 2023). The expanding e-commerce sector has the potential to create a digital ecosystem that enhances the performance of digital banks (Rahardyan, 2022).

The integration of digital banks and e-commerce platforms creates a digital ecosystem that enhances transaction speed, convenience, and ease for users (Burhan, 2024). This collaboration uses system integration, display alignment, and data synchronization between both platforms thus introduces a seamless in-app payment system, where users can make transactions without switching applications (Jago, 2021). Such integration is increasingly demanded by users as 76% of Indonesian respondents considered seamless integration between service providers to be critical for enhancing ease and efficiency in their user experience (Wiradharma, 2022). Practical examples of this include the partnership between Gopay and Bank Jago, which boosted Bank Jago's user base by 35% (Prasasti, 2021), and the collaboration between Shopee and SeaBank, which has driven SeaBank's growth (Seabank, 2024). Such integration enables digital banks to better adapt to market demands, boosting their competitiveness (Aulkemeier et al., 2019).

Customer experience plays a critical role in this integration and is closely linked to Customer Relationship Management (CRM), as both seek to foster customer satisfaction and loyalty (Kumar et al., 2022). CRM refers to a strategic approach for building and maintaining customer relationships by understanding their needs and delivering value at various touchpoints (Gupta, 2023; Soltani and Navimipour, 2016). By understanding factors that could shape customer experience, digital banks can refine their CRM strategies to enhance engagement and encourage reuse of integrated payment services.

User experience in financial services has been the subject of numerous studies (Iman et al., 2023; Mbama and Ezepeue, 2018; Mutambik, 2023; Petersson et al., 2023; Shin, 2021). However, most existing research focuses on digital banking or financial services as standalone service, such as self-service banking technologies (Ugwuanyi et al., 2021), financial technology (Barbu et al., 2021; Karim et al., 2022), open banking (Iman et al., 2023; Mutambik, 2023), and internet banking (Rahi et al., 2021). There is a lack of studies specifically examining the integration of digital banking with e-commerce platforms, where users can directly make payments through the e-commerce interface. Given the increasing demand for digital ecosystems and the importance of seamless user experiences, this integration likely offers unique value compared to traditional financial services. Thus, this research aims to analyze the impact of user experience and satisfaction on the intention to reuse digital banks that are integrated with e-commerce to make payments. This research could provide guidance to e-commerce organizations and digital banks in increasing customers experience to shop in e-commerce. By addressing these gaps, this study provides insights that can guide digital banks and e-commerce platforms in improving customer experiences and building loyalty in the digital ecosystem.

2. Literature review

2.1. Customer relationship management

Customer relationship management (CRM) is a business strategy focusing on customers and used to manage the relationship between the company and customers and potential customers (Kumar et al., 2022). This strategy helps increase customer satisfaction, which makes them more loyal and helps the business grow and generate

more profits for the company (Chauhan et al., 2022). The basis of this approach is the need to create a new business environment that facilitates more effective management of customer relationships (Soltani et al., 2018). CRM includes three main components: people, processes, and technology, all of which aim to understand and meet customer needs (Chen and Popovich, 2003; Gupta, 2023).

In the banking context, CRM plays a role in attracting and retaining customers, as well as increasing customer satisfaction and loyalty, which in turn increases the profitability and sustainability of the banking business (Acheampong et al., 2023; Kumar, 2021). Customers are one of the most important assets that must be maintained and continuously expanded by banking institutions thus it is essential for banks to meet their needs and desires (Karahana and Kuzu, 2014; Sahoo et al., 2024). CRM supports the development of innovative products and services that meet the specific needs of customers, thereby increasing the competitiveness and profitability of banks in the long term (Acheampong et al., 2023).

2.2. Digital bank integrated with e-commerce

Digital banks are a trend in the financial industry which is defined as banks that operate completely online without any physical branch offices (Chauhan et al., 2022). In contrast to conventional banks which is paper-based and use physical branch offices and face-to-face customer service, digital banks do not offer these services and operate completely virtually (Martínez-Navalón et al., 2023; Sha and Mohammad, 2017). This allows users to make transactions anytime and anywhere without having to visit a physical branch or wait in line for banking services (Ionaşcu et al., 2023). The existence of digital banks not only provides convenience for users, but also offers faster and more flexible services (Martínez-Navalón et al., 2023; Sha and Mohammad, 2017).

In the context of this research, integration refers to the combination of functions and services between digital banks and e-commerce, where digital banks function as direct payment methods in e-commerce platforms (Jago, 2021). This collaboration allows transactions to be carried out via in-app-payment without the need to switch applications or use physical payment methods, thus creating a more comfortable and faster shopping experience (Prasasti, 2021). This integration helps align data and business processes in one integrated system, thereby reducing the need for complex and expensive interface development and maintenance (Gulledge, 2006).

2.3. Customer experience

Various researchers have explored and articulated the concept of customer experience over time (Jain et al., 2017). Schwager and Mayer (2007) define customer experience as “*the internal and subjective response that customers have to every direct or indirect contact with a company.*” In general, customer experience is a complex interactive process because there are many aspects involved in customer interactions with products, services and companies from the pre-purchase stage to the post-purchase stage (Windasari et al., 2022). It is the overall outcome of intentional events arising from interactions between the customer and the brand, reflecting the customer’s feelings toward the brand over time (Gunawardane, 2023). In this

interaction, customers respond to various stimuli, which can be sensory, cognitive, emotional, or behavioral, which collectively form perceptions about the experience (Lemon and Verhoef, 2016). According to Schmitt (1999), this experience has a holistic character and involves various dimensions that are integrated during the entire customer purchasing journey, where each of these dimensions is interrelated and contributes to creating a strong and positive impression.

2.4. Hypotheses development

The design of this model adopts and adapts research models from (Karim et al., 2022; Mutambik, 2023; Shin, 2021; Ugwuanyi et al., 2021). We use perceived usefulness, perceived ease of use, reliability, perceived security, perceived value, and perceived risk as antecedents to customer experience. Our proposed model incorporates nine variables and ten hypotheses, as shown in **Figure 1**.

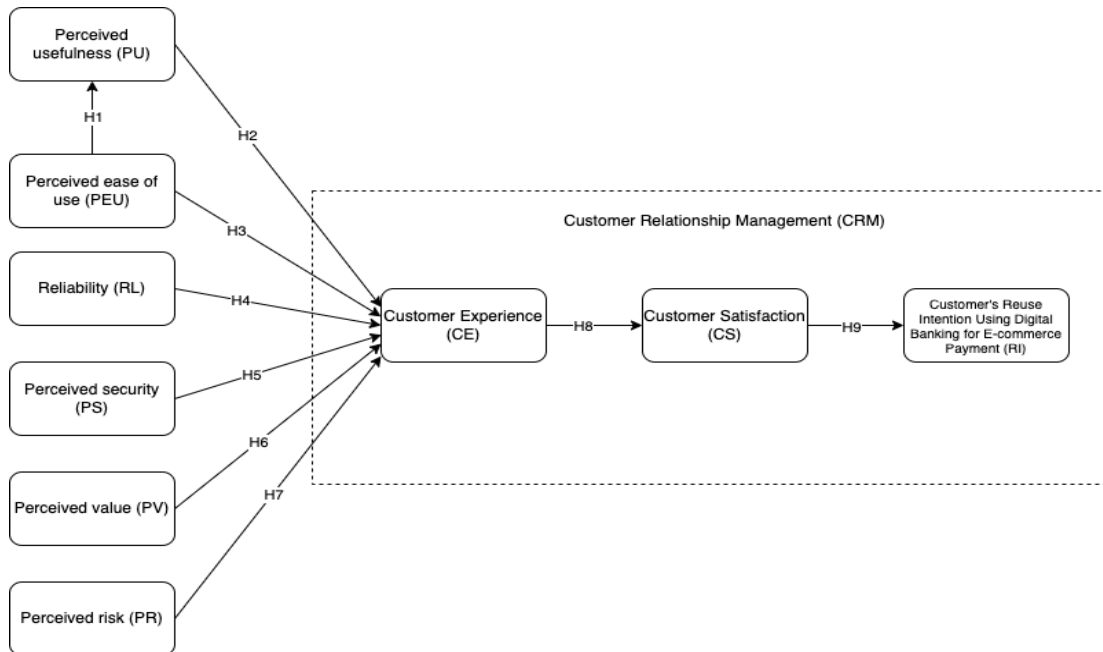


Figure 1. Proposed research model.

Perceived ease of use refers to how much users expect a technology to be easy to use, including intuitive interfaces and accessibility across devices (Karim et al., 2022; Ugwuanyi et al., 2021). Perceived usefulness measures how confident users are that a technology will enhance their performance (Yang et al., 2021). Previous studies have confirmed the relationship between these two factors in contexts such as open banking (Iman et al., 2023) and digital payments (Siagian et al., 2022).

The integration of digital banking with e-commerce simplifies transactions through user-friendly interfaces, easy access, and streamlined processes. This convenience improves usability and transaction efficiency, meeting user needs and boosting performance (Louis et al., 2023). For example, an intuitive interface enhances perceived usefulness by speeding up transactions and ensuring successful outcomes (Siagian et al., 2022). Based on this, we propose the following hypotheses.

H1: Perceived ease of use (PEU) in transactions using digital bank services integrated on e-commerce platforms influences users' perceived usefulness (PU) in making payment transactions.

Ugwuanyi and Idoko (Ugwuanyi et al., 2021) found that perceived usefulness is positively related to customers' cognitive and affective experiences. Users who use digital banks in e-commerce can experience benefits in the form of ease and speed of transactions. With high perceived usefulness, customer experiences tend to be positive, forming good emotional reactions to fintech services (Karim et al., 2022). Integrated digital bank with e-commerce platforms provide faster and more efficient transactions which provides more convenience in transactions. Thus, we proposed a hypothesis:

H2: Perceived usefulness (PU) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions.

Karim et al. (2022) also states that ease of using fintech services, where services can be accessed from various devices and intuitive displays, contributes to and influences customer experience. The ease of users in using digital bank services in e-commerce can improve customer experience by reducing complexity and time, as well as providing convenience in transactions (Mutambik, 2023). In the integrated environment, the ease of use is provided by fewer steps to complete the transaction without switching applications which could shape seamless, positive customer experience. Therefore, we suggest the following hypothesis.

H3: Perceived ease of use (PEU) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions.

Reliability is defined as the ability of a company to provide accurate and reliable services as they should (Sitorus and Yustisia, 2018). Errors or delays in transaction processing can cause negative perceptions, whereas consistent and secure operations increase customer trust and contribute to a positive user experience (Mutambik, 2023). Through the perception that the service is reliable, it can reduce user concerns about the service and create a positive user experience (Kumar et al., 2022). In this research, the reliability of digital bank services means that it can always be used and runs as it should, including the system's ability to operate without interruption and provide a fast and accurate response to every transaction in e-commerce. We therefore recommended the following hypotheses.

H4: Reliability (RL) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions.

Perceived security refers to consumers' beliefs that the existing system can carry out transactions safely (Karim et al., 2022; Roh et al., 2024). In this research, perceived security is the user's perception of security at a digital bank which includes personal data protection, transaction security, and protection against fraud when using digital bank services in e-commerce. With increasing perceptions of security, the user experience becomes more positive because it reduces anxiety and increases trust and comfort in transactions (Almaiah et al., 2023; Martins et al., 2014; Najib et al., 2021) Then, we defined the following hypothesis.

H5: Perceived security (PS) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions.

Perceived value refers to a user's evaluation of a product or service based on perceptions of the benefits received in return for the value provided (Zeithaml, 1988). In the context of digital financial services, perceived value is an important determinant of intention to use digital financial services (Barbu et al., 2021) and has a positive influence on customer experience (Karim et al., 2022; Mutambik, 2023). When users use digital banking services as a payment method in e-commerce, users are not charged additional fees and have a seamless flow to complete transactions which create a positive user experience. Next, we formulated the following hypothesis.

H6: Perceived value (PV) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions.

Perceived risk is defined as an individual's perception of the possibility of experiencing a loss, either during or after a transaction (Mutambik, 2023). Perceived risk is a consideration for users when making transactions using self-service technology and is a factor that has big influence on user experience (Agarwal et al., 2023; Almaiah et al., 2023; Surachman Surjaatmadja et al., 2021). When users feel that digital banking services can carry out their transactions correctly and safely, without worrying about the security of personal data or technical problems when making payments, this will create a good customer experience. Therefore, we identified the following hypothesis.

H7: Perceived risk (PR) in transactions using digital bank services integrated on e-commerce platforms influences the user's customer experience (CE) in making payment transactions

Customer satisfaction is the result of positive interactions between customer experience and the banking technology used (Shin, 2021). When customers have a positive experience with a service, they tend to have higher levels of satisfaction (Ugwuanyi et al., 2021). If a user has a positive experience when using integrated digital bank as a payment method, the user can feel satisfaction that exceeds their expectations. Thus, we proposed the following hypothesis.

H8: Customer experience (CE) in transactions using digital bank services integrated on e-commerce platforms influences user customer satisfaction (CS) in making payment transactions

Shin (2021) shows that customer satisfaction plays an important role in maintaining long-term relationships between customers and banks. Customers who are satisfied with the service tend to return to use the service which indirectly supports the success and growth of the bank in the long term (Shin, 2021; Ugwuanyi et al., 2021). The satisfaction felt by users influences their intention to continue using digital bank services as an integrated payment method in ecommerce and increases the frequency of service use. Thus, we suggest the following hypothesis.

H9: Customer satisfaction (CS) in transactions using digital bank services integrated on e-commerce platforms influences users' reuse intention (RI) in making payment transactions.

3. Methodology

3.1. Quantitative data collection

We used mixed method approach by using online questionnaire and interview. The subject of this research are users of digital banking who have used integration services with e-commerce as payment methods. Before distributing the questionnaire, a readability test was carried out to ensure that each question in the questionnaire was written clearly and could be understood by respondents. Input from respondents in this readability test is used as a basis for evaluating each question item in the research instrument design. Then a quantitative data pilot study was carried out which aimed to test the reliability of the questionnaire developed. The pilot study was carried out for 6 days and involved 39 participants. The cronbach’s alpha (CA) calculation results from the pilot study of this research show that all variables have CA values >0.7.

The quantitative data collection process was carried out by distributing questionnaires online via various social media from 20 February 2024, to 19 March 2024 and succeeded in obtaining 471 valid respondents. Qualitative data collection was carried out from 7 April to 27 April 2024 by conducting interviews with 30 respondents to obtain views and understanding from respondents in more detail regarding the results of quantitative data analysis.

3.2. Research instruments

The questionnaire consists of respondent demographics, and measurement items of each variable used in this study. In the respondent validity section, several questions were asked to ensure that the respondent meets the criteria, namely digital bank users, ever using digital bank integration services in e-commerce to make payments, frequency of use, and experience in using these services. The second part was questions regarding the respondent demographics, **Table 1** describes the demographic of respondents. Finally, questions related to research variables represented in 36 questions (Appendix). These indicators will later be answered on a five-level Likert scale from 1 (strongly disagree) to 5 (strongly agree). Apart from using a questionnaire, this research also uses qualitative methods through interviews to obtain justification for the results of hypothesis testing carried out at the quantitative stage.

Table 1. Demographic respondents.

Demographic		Number of respondents	Percentage (%)
Gender	Male	208	44.16
	Female	263	55.84
Age	< 17 years old	5	1.06
	17–25 years old	330	70.06
	26–45 years old	101	21.44
	> 45 years old	35	7.43

Table 1. (Continued).

Demographic		Number of respondents	Percentage (%)
Education Level	Postgraduate	56	11.89
	Bachelor	347	73.67
	Diploma	17	3.61
	High school	49	10.40
	Not pursuing formal education	2	0.42
Occupation	Students	264	56.05
	Private employees	50	10.62
	State-owned enterprises employees	44	9.34
	Entrepreneur	39	8.28
	Civil servant	33	7.01
	unemployed	13	2.76
	homemaker	8	1.70
	others	20	4.25
Duration of digital bank usage	< 3 months	57	12.10
	3–6 months	88	18.68
	6–12 months	66	14.01
	1–3 years	142	30.15
	3 years	118	25.05

3.3. Quantitative analysis method

The covariance based structural equation modeling (CB-SEM) was chosen to confirm the theories that have been explained in previous studies, where all hypotheses in this research are built based on existing theories. CB-SEM is suitable for research that focuses on testing complex theories and models with many latent variables and causal paths, so it still provides advantages in understanding the structural relationships between variables in depth (Hair et al., 2019). Quantitative data processing is carried out using tools such as IBM SPSS 25 and AMOS 26.

The covariance-based SEM (CB-SEM) process involves key steps essential for testing complex models that explain variable relationships. First, model specification defines the structural model, including latent and observed variables and their relationships, establishing the framework for analysis (Hair et al., 2019). Next, model identification ensures the model has sufficient information for unique estimation and all parameters are correctly identified (Hair et al., 2019). Parameters are then estimated, typically using maximum likelihood estimation, though alternative methods may be applied depending on data distribution and model specifics (Hair et al., 2017).

The model testing phase evaluates the hypothesized model’s fit with observed data using indices such as Chi-square (χ^2) Test, RMSEA, CFI, TLI, and SRMR to assess how well the model reproduces the observed data (Evermann and Tate, 2011). If the fit is inadequate, model re-specification adjusts the model—adding or removing paths—based on theoretical and statistical justifications (Hair et al., 2017). Finally, iterative model fit assessment ensures the revised model robustly represents the data

and theory, often requiring multiple refinements to achieve optimal results (Evermann and Tate, 2011).

3.4. Qualitative data collection

Qualitative data collection was conducted by interviewing 30 respondents with the criteria of respondents who use digital bank integration services with e-commerce who are willing to be interviewed further offline and online via telephone, Zoom platform & Google Meet platform. This aims to obtain views and understanding from respondents in more detail. From this interview, a deeper understanding was also obtained regarding the reasons for the hypotheses that were rejected from the results of quantitative data analysis. The respondent interview process was conducted between 7 April and 27 April 2024.

3.5. Qualitative analysis method

This study applies the content analysis method to process and analyze qualitative data. This method is divided into four stages, namely data collection, coding, analysis, and interpretation of the content of the coding results (Duriau et al., 2007). At the data collection stage, researchers select data sources and identify valid respondent criteria (Gaur and Kumar, 2018). Then researchers develop a coding scheme and conduct analysis to understand the data and obtain a general picture and finally interpret the results of the analysis into paragraphs to support and validate the results of the hypothesis test that has been carried out at the quantitative analysis stage (Gaur and Kumar, 2018). The results of processing and analyzing qualitative data are also used as a reference in drawing conclusions, providing implications and research suggestions.

4. Results

The research utilized covariance-based structural equation modeling (CB-SEM) analysis, consisting of measurement model and the structural model. The measurement model assesses the relationships between observed indicators and their constructs to ensure validity and reliability. The structural model tests the hypothesized relationships among constructs.

4.1. Measurement model

Several steps were followed in testing the measurement model, including the convergent validity test, reliability test, and discriminant validity test. The convergent validity test assesses loading factors and average variance extracted (AVE) for all research construct indicators, requiring a loading factor greater than 0.7 and an AVE of at least 0.5 (Hair et al., 2017). The next step is the reliability test, which assesses the consistency of a measurement tool or instrument under similar (Hair et al., 2017). In this study, reliability was tested using Composite Reliability (CR) and Cronbach's Alpha (CA). A CR and CA value above 0.70 is considered the standard for indicating consistent measurement of a concept (Henseler et al., 2016). All variables in this study exceeded these thresholds for AVE, CR, and CA, thereby passing the reliability test. **Table 2** shows the AVE, CA, and CR value for all variables. Next stage is testing discriminant validity, which evaluates how well indicators match their corresponding

construct. Each variable has highest value with its construct, confirming the distinctiveness of the indicators.

Table 2. AVE, CA, and CR values for each variable.

Variable	AVE	CA	CR
PU	0.645	0.847	0.845
PEU	0.570	0.803	0.799
RL	0.964	0.795	0.988
PS	0.617	0.862	0.865
PV	0.963	0.793	0.987
PR	0.641	0.841	0.842
CE	0.645	0.849	0.845
CS	0.956	0.824	0.985
RI	0.702	0.904	0.904

4.2. Structural model

Structural model testing is a step used to validate the relationship between constructs (Hair, Howard, and Nitzl, 2020). At this stage, we assess the Goodness of fit (GoF) index of the model which are chi-square divided by degree of freedom (CMIN/df), Goodness of Fit Index (GFI), Root Mean Square Residual (RMR), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). As indicated in **Table 3**, all indices have met the cut-off value so that all of them have met the criteria for good fit.

Table 3. Goodness of Fit value.

GoF Index	Threshold	Results	Description
CMIN/df	< 2	1.989	Good fit
GFI	≥ 0.09	0.919	Good fit
RMR	≤ 0.05	0.041	Good fit
NFI	≥ 0.9	0.934	Good fit
CFI	≥ 0.9	0.965	Good fit
TLI	≥ 0.9	0.954	Good fit
RMSEA	≤ 0.08	0.048	Good fit

In this research, hypothesis testing was carried out using a two-tailed approach at a significance level of 5%. The hypothesis is accepted if the *p*-value is <0.05, and rejected if the value is ≥0.05 (Bayarri et al., 2016). The results of this hypothesis test show that of the nine hypotheses proposed, only one hypothesis was rejected, namely the hypothesis stating the relationship between PS and CE. **Table 4** describes the results of the hypothesis testing.

Table 4. Hypotheses testing results.

Hypotheses				Estimate	Lower	Upper	<i>p</i>	Results
H1	PU	<	PEU	0.897	0.813	0.958	0.002	Accepted
H2	CE	<	PU	0.456	0.321	0.595	0.002	Accepted
H3	CE	<	PEU	0.183	0.069	0.287	0.002	Accepted
H4	CE	<	RL	0.068	0.001	0.144	0.047	Accepted
H5	CE	<	PS	0.091	-0.074	0.237	0.225	Rejected
H6	CE	<	PV	0.120	0.053	0.186	0.002	Accepted
H7	CE	<	PR	0.179	0.014	0.367	0.032	Accepted
H8	CS	<	CE	0.740	0.687	0.814	0.001	Accepted
H9	RI	<	CS	0.763	0.672	0.850	0.001	Accepted

The calculation of the effect size is used to measure the strength or magnitude of the relationship between the dependent variable and the independent variable. The effect size is divided into three categories: small ($0.2 < \text{effect size} < 0.5$), medium ($0.5 < \text{effect size} < 0.8$), and large ($0.8 < \text{effect size} < 1.4$) (McLeod, Cappelleri, and Hays, 2016). **Table 5** shows that customer experience variable is largely predicted by our independent variables meanwhile customer experience and reuse intention are moderately predicted.

Table 5. Effect size for dependent variables.

Parameter	SE	SE-SE	Effect size	Bias	SE-Bias	Despriction
PU	0.063	0.001	0.799	-0.005	0.002	Medium
CE	0.035	0.001	0.820	-0.001	0.001	Large
CS	0.047	0.001	0.542	-0.006	0.001	Medium
RI	0.058	0.001	0.656	-0.006	0.002	Medium

To complement and validate the findings from the quantitative analysis, which identified eight supported hypotheses and one rejected hypothesis, a qualitative study was conducted. We performed semi-structured interviews with 30 participants who met the criteria of having used integrated digital banking and e-commerce services.

The interviews utilized open-ended questions aimed at exploring relationships between variables. For example, participants were asked, “*What examples of ease have you experienced when using integrated digital banking services in e-commerce?*” and “*How did that ease influence your overall experience?*” The interview transcripts were analyzed using a systematic coding process following the framework by Elo and Kyngäs (2008). The analysis involved developing a valid coding scheme, understanding the data to explore underlying patterns, and interpreting the results to address the research questions and theoretical framework.

5. Discussion

This study demonstrates that users’ perceived usefulness (H2), perceived ease of use (H3) and perceived value (H6) are most significant predictors of customer experience which supports prior research (Andrew Susanto et al., 2023; Iman et al., 2023; Karim et al., 2022; Mutambik, 2023; Ugwuanyi et al., 2021). Supported by our

qualitative analysis, these results highlight the distinctive experience in integrated digital banking and e-commerce environment where users could complete their payment seamlessly without switching applications. This integrated environment simplifies and reduces steps to complete the transaction. For example, when using separated digital banking application, users may need to learn the mechanisms to pay from their digital bank application such as putting unique code. However, by using integrated digital bank, users only need to put their digital bank PIN within the e-commerce platform, making the process more efficient as described by respondent (5) *“Because it is integrated, we can stay on one application, (which) save time and low effort”* and respondent (14), *“In situations that require a fast process, using this service is very helpful and improves my experience.”* The integration between digital bank and e-commerce also supports efficiency and effectiveness for users to satisfy their needs, shaping the perceived usefulness of this integrated system, explaining the acceptance of significant relationship between perceived ease of use to perceived usefulness (H1) which is in line with previous study (Louis et al., 2023).

Our result also identifies the significant relationship between reliability and customer experience (H4) which aligns with Mutambik (2023) and Kumar et al. (2022), indicating that reliability strongly influences customer experience in retail banking. Integrated environment between digital banking and e-commerce platform aims to reduce cart abandoned by providing seamless and frictionless payment experience. Therefore, this environment needs to complete the payment accurately and consistently to shape satisfying and positive user experience. On the other hand, any transaction errors or delays will disrupt the core benefit of this integrated systems.

Furthermore, our finding indicates that perceived risk also significantly drives customer experience (H7). Based on our qualitative analysis, we found that users may concern about data privacy and financial loss. These concerns arise because digital bank is considered novel in Indonesia and the reputation still not mature. Furthermore, when they integrate their digital bank with e-commerce, they may feel added concern because they have to share their digital bank details to third-party application which could have higher risks in data breaches and unauthorized access. This finding aligns with previous studies in digital banks suggesting that the higher the perceived risk felt by fintech service users, the more negatively it impacts their customer experience (Agarwal et al., 2023; Mutambik, 2023).

In contrast to our expectation, this study finds that perceived security (H5) does not significantly influence customer experience which contradicts studies (Almaiah et al., 2023; Karim et al., 2022; Najib et al., 2021). Based on our interview, it was found that the security measures—such as PINs and two-step verification—allow users to feel secure when transacting through integrated digital banking and e-commerce platforms. One possible explanation is that security features in this context can be seen as hygiene factors—necessary but not sufficient to drive satisfaction or positively shape the user experience (Tuch and Hornbæk, 2015). As one respondent (16) stated, *“I feel safe because these security features are always present and well-maintained, especially for banking, so it doesn’t really affect my shopping experience.”* Another respondent (23) added, *“Since I already feel safe, it doesn’t have much of an impact. If we didn’t feel secure, our usage would drop significantly.”* The users of integrated digital banking and e-commerce are familiar with digital financial services, so they

view security features like PINs as routine requirements rather than confidence-enhancing elements. In line with Ogedengbe (2020), users regard these features as part of a trusted platform, but they do not shape their overall experience. Additionally, security and privacy are perceived by customers as antecedents to trust (Roh et al., 2024).

Additionally, this study finds a significant relationship between customer experience and customer satisfaction (H8), aligning with research by Ugwuanyi and Idoko (2021). These results emphasize that a positive customer experience directly contributes to increased customer satisfaction, highlighting the strong connection between these two variables (Mbama and Ezepue, 2018). Similarly, Chauhan et al. (2022) found that customer experience shaped by functional quality, trust, and convenience, contribute to customer satisfaction. Finally, we also found that customer satisfaction drives users to reuse the integrated system (H9). Users who feel more satisfaction will tend to continuously use the digital banking application (Shin, 2021; Ugwuanyi et al., 2021).

6. Conclusion

This study contributes to the literature on customer experience and loyalty in digital financial services by extending previous frameworks from the standalone financial technology context to an integrated digital banking and e-commerce environment. This research is built upon existing research that emphasizes customer experience in financial technology (Karim et al., 2022; Mutambik, 2023; Ugwuanyi et al., 2021). Our findings reveal that in an integrated system, seamlessness and efficiency are the key drivers of a positive user experience. This emphasizes the role of integration in fostering customer satisfaction and loyalty by allowing users to complete transactions without switching applications. Given these insights, we suggest that developers of digital banking and e-commerce platforms focus on reducing friction and simplifying the transaction process while ensuring accuracy and consistency. Any errors or delays in transactions could undermine the benefits of integration and negatively impact the user experience, potentially leading to disengagement.

Our study also identifies perceived risk as a significant, negative influence on customer experience. Users' concerns around data privacy and potential financial loss in the integrated environment highlight the importance of managing trust in systems that share data between digital banking and third-party e-commerce platforms. Thus, we suggest the need for future research to examine the role of trust in integrated systems. Based on our findings, we recommend that digital banking and e-commerce platforms go beyond basic security measures to mitigate perceived risks. To reduce perceived risk, platforms should explore additional security innovations and communicate them clearly to users. Lastly, by focusing on improving customer experience, digital bank and e-commerce platforms could shape more customer satisfaction which enhances customer loyalty.

Furthermore, this study has several limitations that should be considered when interpreting the results. First, the majority of our respondents are between the ages of 17–25 years and are domiciled in Greater Jakarta, a capital city with high digital and

financial literacy. This respondent segment is used to financial technology, which may limit the generalizability of the findings to other demographic groups with lower digital and financial literacy. Therefore, the results may differ when applied to users from regions with lower digital engagement or those outside this specific age group. Second, while this study primarily focuses on the customer's perspective, it does not extensively explore the platform-level factors, such as the data and system integration strategies, display and design alignment, and platform features that may also influence the customer experience. Future research should consider incorporating these platform-related aspects to provide a more comprehensive understanding of the factors driving customer experience in integrated digital banking and e-commerce ecosystems.

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References

- Acheampong, S., Pimonenko, T., & Lyulyov, O. (2023). Sustainable Marketing Performance of Banks in the Digital Economy: The Role of Customer Relationship Management. *Virtual Economics*, 6(1), 19–37. [https://doi.org/10.34021/ve.2023.06.01\(2\)](https://doi.org/10.34021/ve.2023.06.01(2))
- Agarwal, S., Malik, P., & Gautam, S. (2023). Analysis of Customer Satisfaction and the Customer Experience in Digital Payments: A Meta-Analysis Review. *Int. Journal of Business Science and Applied Management*, 18(1).
- Almaiah, M. A., Al-Otaibi, S., Shishakly, R., Hassan, L., Lutfi, A., Alrawad, M., Qatawneh, M., & Alghanam, O. A. (2023). Investigating the Role of Perceived Risk, Perceived Security and Perceived Trust on Smart m-Banking Application Using SEM. *Sustainability (Switzerland)*, 15(13). <https://doi.org/10.3390/su15139908>
- Andrew Susanto, S., Valensius Manek, M., Alfonso Setiawan, R., & Mustikasari, F. (2023). Customer Experience in Digital Banking: The Influence of Convenience, Security, and Usefulness on Customer Satisfaction and Customer Loyalty in Indonesia. *Journal of Research and Community Service*, 4(8). <http://devotion.greenvest.co.id>
- Antara. (2023, November 28). OJK highlights need to increase people's financial literacy. Antara.
- Aulkemeier, F., Iacob, M.-E., & van Hillegersberg, J. (2019). Platform-based collaboration in digital ecosystems. *Electronic Markets*, 29(4), 597–608. <https://doi.org/10.1007/s12525-019-00341-2>
- Barbu, C. M., Florea, D. L., Dabija, D.-C., & Barbu, M. C. R. (2021). Customer Experience in Fintech. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1415–1433. <https://doi.org/10.3390/jtaer16050080>
- Bayarri, M. J., Benjamin, D. J., Berger, J. O., & Sellke, T. M. (2016). Rejection odds and rejection ratios: A proposal for statistical practice in testing hypotheses. *Journal of Mathematical Psychology*, 72, 90–103. <https://doi.org/10.1016/j.jmp.2015.12.007>
- Burhan, F. A. (2024, May). Sokongan Ekosistem E-Commerce ke Bisnis Bank Digital Seabank, Jago, dan Allo Bank. . BISNIS.Com.
- Chauhan, S., Akhtar, A., & Gupta, A. (2022). Customer experience in digital banking: a review and future research directions. *International Journal of Quality and Service Sciences*, 14(2), 311–348. <https://doi.org/10.1108/IJQSS-02-2021-0027>

- Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM). *Business Process Management Journal*, 9(5), 672–688. <https://doi.org/10.1108/14637150310496758>
- Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A Content Analysis of the Content Analysis Literature in Organization Studies: Research Themes, Data Sources, and Methodological Refinements. *Organizational Research Methods*, 10(1), 5–34. <https://doi.org/10.1177/1094428106289252>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Evermann, J., & Tate, M. (2011). Fitting Covariance Models for Theory Generation. *Journal of the Association for Information Systems*, 12(9), 632–661. <https://doi.org/10.17705/1jais.00276>
- Financial Services Authority. (2022, February 21). Penguatan Infrastruktur Digital Dukung E-Commerce Lebih Sustain. . OJK.Go.Id.
- Gaur, A., & Kumar, M. (2018). A systematic approach to conducting review studies: An assessment of content analysis in 25 years of IB research. *Journal of World Business*, 53(2), 280–289. <https://doi.org/10.1016/j.jwb.2017.11.003>
- Gulledge, T. (2006). What is integration? *Industrial Management & Data Systems*, 106(1), 5–20. <https://doi.org/10.1108/02635570610640979>
- Gunawardane, G. (2023). Enhancing customer satisfaction and experience in financial services: a survey of recent research in financial services journals. *Journal of Financial Services Marketing*, 28(2), 255–269. <https://doi.org/10.1057/s41264-022-00148-x>
- Gupta, P. K. (2023). A Framework for Successful CRM Implementation in Indian Banking Sector. *International Journal of Engineering and Management Research*, 13(5), 31–36. <https://doi.org/10.31033/ijemr.13.5.6>
- Hair, J. F., Anderson, R. E., & Black, W. C. (2019). *Multivariate Data Analysis* (8th ed.). Cengage.
- Hair, J. F., Babin, B. J., & Krey, N. (2017). Covariance-Based Structural Equation Modeling in the Journal of Advertising : Review and Recommendations. *Journal of Advertising*, 46(1), 163–177. <https://doi.org/10.1080/00913367.2017.1281777>
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Iman, N., Nugroho, S. S., Junarsin, E., & Pelawi, R. Y. (2023). Is technology truly improving the customer experience? Analysing the intention to use open banking in Indonesia. *International Journal of Bank Marketing*, 41(7), 1521–1549. <https://doi.org/10.1108/IJBM-09-2022-0427>
- Ionașcu, A. E., Gheorghiu, G., Spătaru, E. C., Munteanu, I., Grigorescu, A., & Dănilă, A. (2023). Unraveling Digital Transformation in Banking: Evidence from Romania. *Systems*, 11(11), 534. <https://doi.org/10.3390/systems11110534>
- Jago. (2021). GoPay dan Bank Jago Hadirkan Integrasi Bank Digital dan Platform On-Demand Pertama di Indonesia. Jago.Com.
- Jain, R., Aagja, J., & Bagdare, S. (2017). Customer experience – a review and research agenda. *Journal of Service Theory and Practice*, 27(3), 642–662. <https://doi.org/10.1108/JSTP-03-2015-0064>
- Jayani, D. H. (2021, October 7). Pengguna Bank Digital di Indonesia Diproyeksi Capai 748 Juta pada 2026. Katadata.
- Karahan, M., & Kuzu, Ö. H. (2014). Evaluating of CRM in Banking Sector: A Case Study on Employees of Banks in Konya. *Procedia - Social and Behavioral Sciences*, 109, 6–10. <https://doi.org/10.1016/j.sbspro.2013.12.412>
- Karim, R. Al, Sobhani, F. A., Rabiul, M. K., Lepee, N. J., Kabir, M. R., & Chowdhury, M. A. M. (2022). Linking Fintech Payment Services and Customer Loyalty Intention in the Hospitality Industry: The Mediating Role of Customer Experience and Attitude. *Sustainability*, 14(24), 16481. <https://doi.org/10.3390/su142416481>
- Kumar, P., Mokha, A. K., & Pattnaik, S. C. (2022). Electronic customer relationship management (E-CRM), customer experience and customer satisfaction: evidence from the banking industry. *Benchmarking: An International Journal*, 29(2), 551–572. <https://doi.org/10.1108/BIJ-10-2020-0528>
- Kumar, S. (2021). The Relevance of Customer Relationship Management Strategies in Creating Customer Loyalty and Satisfaction: An Analytical Study. *Shanlax International Journal of Management*, 8(3), 31–36. <https://doi.org/10.34293/management.v8i3.3587>
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, 80(6), 69–96. <https://doi.org/10.1509/jm.15.0420>

- Louis, E. N., Sartono, E. S., Patricia, E., Gui, A., Shaharudin, M. S., Pitchay, A. A., & Chanda, R. C. (2023). Factors Influencing Customers Intention to Use Digital Banking Services. 2023 IEEE Symposium on Industrial Electronics & Applications (ISIEA), 1–6. <https://doi.org/10.1109/ISIEA58478.2023.10212252>
- Martínez-Navalón, J. G., Fernández-Fernández, M., & Alberto, F. P. (2023). Does privacy and ease of use influence user trust in digital banking applications in Spain and Portugal? *International Entrepreneurship and Management Journal*, 19(2), 781–803. <https://doi.org/10.1007/s11365-023-00839-4>
- Martins, C., Oliveira, T., & Popovič, A. (2014). Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, 34(1), 1–13. <https://doi.org/10.1016/j.ijinfomgt.2013.06.002>
- Mbama, C. I., & Ezepue, P. O. (2018). Digital banking, customer experience and bank financial performance. *International Journal of Bank Marketing*, 36(2), 230–255. <https://doi.org/10.1108/IJBM-11-2016-0181>
- McLeod, L. D., Cappelleri, J. C., & Hays, R. D. (2016). Best (but oft-forgotten) practices: expressing and interpreting associations and effect sizes in clinical outcome assessments. *The American Journal of Clinical Nutrition*, 103(3), 685–693. <https://doi.org/10.3945/ajcn.115.120378>
- Mutambik, I. (2023). Customer Experience in Open Banking and How It Affects Loyalty Intention: A Study from Saudi Arabia. *Sustainability*, 15(14), 10867. <https://doi.org/10.3390/su151410867>
- Najib, M., Ermawati, W. J., Fahma, F., Endri, E., & Suhartanto, D. (2021). FinTech in the Small Food Business and Its Relation with Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 88. <https://doi.org/10.3390/joitmc7010088>
- Ogedengbe, F. A., & Abdul-Talib, Y. Y. (2020). Factors influencing electronic banking continuance usage intention in developing economies: a study of Nigeria. In *Int. J. Business Information Systems* (Vol. 35, Issue 1).
- Petersson, A. H., Pawar, S., & Fagerstrøm, A. (2023). Investigating the factors of customer experiences using real-life text-based banking chatbot: A qualitative study in Norway. *Procedia Computer Science*, 219, 697–704. <https://doi.org/10.1016/j.procs.2023.01.341>
- Prasasti, G. D. (2021, July 22). Blibli dan Blu Kolaborasi Bidik Kalangan Digital Savvy. *Liputan 6*.
- Rahardyan A. (2022, January 11). 2 Ekosistem Ini Bakal Jadi Rebutan Bank Digital, Apa Itu? <https://finansial.bisnis.com/read/20220111/90/1487903/2-ekosistem-ini-bakal-jadi-rebutan-bank-digital-apa-itu>.
- Rahi, S., & Abd Ghani, M. (2021). Examining internet banking user's continuance intention through the lens of technology continuance theory and task technology fit model. *Digital Policy, Regulation and Governance*, 23(5), 456–474. <https://doi.org/10.1108/DPRG-11-2020-0168>
- Respati, A. R. (2023, November 19). Peran Bank Digital Dorong Pertumbuhan Ekonomi Indonesia. <https://money.kompas.com/read/2023/11/19/200000226/peran-bank-digital-dorong-pertumbuhan-ekonomi-indonesia>.
- Roh, T., Yang, Y. S., Xiao, S., & Park, B. II. (2024). What makes consumers trust and adopt fintech? An empirical investigation in China. *Electronic Commerce Research*, 24(1), 3–35. <https://doi.org/10.1007/s10660-021-09527-3>
- Sahoo, S. K., Sahoo, S., & Cagaňová, M. A. D. (2024). Strategic Relationship of CRM with Effectiveness of Branch-Banking and E-Banking: An Input for Innovative Marketing of Banking Products. *Journal of Relationship Marketing*. <https://doi.org/10.1080/15332667.2024.2405329>
- Schmitt, B. (1999). Experiential Marketing. *Journal of Marketing Management*, 15(1–3), 53–67. <https://doi.org/10.1362/026725799784870496>
- Schwager, A., & Meyer, C. (2007, February). Understanding Customer Experience. *Harvard Business Review*.
- Seabank. (2024, November 18). Wawancara Presdir SeaBank: Rahasia di Balik Cetak Laba dan Kejara Keberlanjutan. *Seabank*.
- Sha, N., & Mohammad, S. (2017). Virtual banking and online business. *Banks and Bank Systems*, 12(1), 75–81. [https://doi.org/10.21511/bbs.12\(1\).2017.09](https://doi.org/10.21511/bbs.12(1).2017.09)
- Shin, J. W. (2021). Mediating effect of satisfaction in the relationship between customer experience and intention to reuse digital banks in Korea. *Social Behavior and Personality: An International Journal*, 49(2), 1–18. <https://doi.org/10.2224/sbp.9753>
- Siagian, H., Tarigan, Z. J. H., Basana, S. R., & Basuki, R. (2022). The effect of perceived security, perceived ease of use, and perceived usefulness on consumer behavioral intention through trust in digital payment platform. *International Journal of Data and Network Science*, 6(3), 861–874. <https://doi.org/10.5267/j.ijdns.2022.2.010>
- Sitorus, T., & Yustisia, M. (2018). The influence of Service Quality and Customer Trust toward Customer Loyalty: The role of customer satisfaction. *International Journal for Quality Research*, 12(3), 639–654. <https://doi.org/10.18421/IJQR12.03-06>

- Soltani, Z., & Navimipour, N. J. (2016). Customer relationship management mechanisms: A systematic review of the state of the art literature and recommendations for future research. *Computers in Human Behavior*, 61, 667–688. <https://doi.org/10.1016/j.chb.2016.03.008>
- Soltani, Z., Zareie, B., Milani, F. S., & Navimipour, N. J. (2018). The impact of the customer relationship management on the organization performance. *The Journal of High Technology Management Research*, 29(2), 237–246. <https://doi.org/10.1016/j.hitech.2018.10.001>
- Surachman Surjaatmadja, Tabrani, & Aini Kusniawati. (2021). The Structural Relationship Information Technology Used and Risk toward Banking Customer Satisfaction during Covid19, Indonesia. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(4), 1618–1630. <https://doi.org/10.17762/turcomat.v12i4.1417>
- Tuch, A. N., & Hornbæk, K. (2015). Does Herzberg’s notion of hygienes and motivators apply to user experience? *ACM Transactions on Computer-Human Interaction*, 22(4), Article 16. <https://doi.org/10.1145/2724710>
- Ugwuanyi, C. C., Uduji, J. I., & Oraedu, C. (2021). Customer experience with self-service technologies in the banking sector: evidence from Nigeria. *International Journal of Business and Systems Research*, 15(4), 405. <https://doi.org/10.1504/IJBSR.2021.115983>
- Wandasari, N. A., Kusumawati, N., Larasati, N., & Amelia, R. P. (2022). Digital-only banking experience: Insights from gen Y and gen Z. *Journal of Innovation and Knowledge*, 7(2). <https://doi.org/10.1016/j.jik.2022.100170>
- Wiradharma, E. K. (2022, December 2). Riding the wave of Indonesia’s financial services growth. PT Ernst & Young Indonesia.
- Xue, M., Hitt, L. M., & Chen, P. (2011). Determinants and Outcomes of Internet Banking Adoption. *Management Science*, 57(2), 291–307. <https://doi.org/10.1287/mnsc.1100.1187>
- Yang, M., Mamun, A. Al, Mohiuddin, M., Nawari, N. C., & Zainol, N. R. (2021). Cashless Transactions: A Study on Intention and Adoption of e-Wallets. *Sustainability*, 13(2), 831. <https://doi.org/10.3390/su13020831>
- Yoon, H. S., & Barker Steege, L. M. (2013). Development of a quantitative model of the impact of customers’ personality and perceptions on Internet banking use. *Computers in Human Behavior*, 29(3), 1133–1141. <https://doi.org/10.1016/j.chb.2012.10.005>
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2–22. <https://doi.org/10.1177/002224298805200302>

Appendix

Table A1. Questionnaire instruments.

Code	Measurement Items	References
PU1	I use digital banking services to speed up transaction processes.	Iman et al. (2023)
PU2	I use digital banking services to enhance transaction effectiveness.	
PU3	I can save time when using digital banking services.	Karim et al. (2022)
PU4	The integration of digital banks with e-commerce meets my needs.	
PEU1	The payment process using digital banking services is simple.	Mutambik (2023)
PEU2	The payment process using digital banking services is easy to perform.	
PEU3	The payment process using digital banking services is user-friendly.	Karim et al. (2022)
PEU4	The payment process using digital banking services is clear and easy to understand.	Iman et al. (2023)
RL1	Digital banking services are trustworthy.	Mutambik (2023)
RL2	I have no concerns about security or privacy with digital banking services.	
RL3	The payment process using digital banking services always works as it should.	
RL4	I am confident that digital banking services are always available when I need them.	
PS1	I am confident that the protection system in digital banking services can protect my financial information.	Karim et al. (2022)
PS2	I feel safe with the information provided about usage instructions and terms and conditions in digital banking services.	
PS3	I am not worried about data or information security when using digital banking services.	
PS4	I feel safe with the transparency about how user data is stored and accessed in digital banking services.	
PV1	I save money by using digital banking services.	Barbu et al. (2021)
PV2	I consider digital banking services a good option.	
PV3	The benefits I get from digital banking services are greater than what I have to give.	Prodanova et al. (2019)
PV4	I can optimize the use of my time and money by using digital banking services.	
PR1	I am aware of the risks associated with digital banking services.	Poromatikul et al. (2020)
PR2	I consider the risk of using these digital banking services to be low.	Mutambik (2023)
PR3	I feel that these digital banking services are safe.	
PR4	I am aware that digital banking services will handle my transactions correctly.	Almarashdeh et al. (2019)

Table A1. (Continued).

Code	Measurement Items	References
CE1	Digital banking services are fast and convenient.	
CE2	I use digital banking services to get what I want.	Mutambik (2023)
CE3	I enjoy using digital banking services.	
CE4	I am enthusiastic about using digital banking services.	Karim et al. (2022)
CS1	I am satisfied with my decision to use digital banking services.	
CS2	I am satisfied with the effectiveness of digital banking service	Poromatikul et al. (2020)
CS3	I am satisfied with the efficiency of digital banking services.	
CS4	Overall, I am satisfied with using digital banking services.	Rahi and Ghani (2021)
RI1	I will use digital banking services again.	
RI2	I want to continue using digital banking services.	Yoon and Joung (2020)
RI3	I will use digital banking services again.	
RI4	I intend to use digital banking services again if I have the opportunity.	Prodanova et al. (2019)