

Moderating role of customer involvement in the relationship between behavioral intention and use behavior

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Abstract: This study aims to investigate the moderating role of customer involvement in the relationship between behavioral intention and actual usage behavior of digital transaction services. By integrating the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) with consumer involvement theory, it offers a new perspective on user behavior in the digital banking sector. A quantitative, causal-explanatory research design was applied, targeting long-term users of digital transaction services from two major banks in Bali—one state-owned and one private. Data were collected using structured questionnaires and analyzed using structural equation modeling to evaluate relationships among key UTAUT2 constructs, behavioral intention, actual usage, and the moderating effect of customer involvement. The findings reveal that performance expectancy, social influence, facilitating conditions, price value, and habit significantly influence behavioral intention. Behavioral intention strongly affects actual usage behavior. Importantly, customer involvement significantly moderates this relationship, amplifying the impact of behavioral intention on usage, and also serves as a direct predictor. The study concludes that customer involvement enhances the consistency of digital service use. Practically, the results suggest that banks should personalize digital services, improve communication strategies, and invest in digital infrastructure to boost customer engagement and encourage sustained use of digital banking platforms.

Keywords: Behavioral intention, Customer involvement, Digital transaction Services, User behavior.

1. Introduction

Digital transformation in the financial industry is an inevitable phenomenon in the modern era. To address these evolving changes and challenges, banks continuously innovate and develop sustainable digital transaction services. This transformation not only aims to increase added value for customers but also enhances business process efficiency and drives banking revenue growth through the optimization of technology-based services [1].

Innovations in digital transaction services are being implemented in alignment with regulatory policies, particularly Bank Indonesia's vision for the Indonesian Payment System 2025, which encourages banks to transition toward end-to-end digitalization. To facilitate seamless transactions, banks have introduced digital services for retail customers, shifting from conventional banking models to advanced platforms such as short message services (SMS), mobile banking applications, and financial super apps. These ongoing innovations reflect the banking sector's commitment to customer-centric features that address users' needs and daily activities [2].

Digital transaction services promote the concept of a “bank in your hands”, offering comprehensive financial solutions. Customers can now fulfill all their financial needs through a single, unified application. As part of this digital transformation, these services enable customers to access banking

platforms anytime and anywhere. Financial needs are seamlessly integrated into one application, allowing smooth interaction with customers' preferred digital ecosystems for a more flexible and practical banking experience.

For the retail customer segment, digital transaction services aim not only to boost banking profits but also to improve efficiency in allocating investment funds for branch development, procurement, and maintenance of physical infrastructure like ATMs, EDC machines, and payment cards. Furthermore, these services encourage the creation of a cashless society, adhering to prudential banking principles while promoting public welfare. However, the development of these services requires substantial financial investments, making it crucial that they are fully utilized to maximize their potential.

Data from Bank Indonesia in Bali highlights two banks with the highest number of registered users for digital transaction services: one National Private Commercial Bank (BUSN) and one State-Owned Bank (BUMN). Figure 1 illustrates a comparison of active digital service users, showing that in 2023, BUSN banks had only 57% of registered users actively using the service, while BUMN banks had a slightly higher 63% of active users [3]. The gap between registered users and active users indicates a significant opportunity for further research into customer engagement and adoption of digital transaction services.

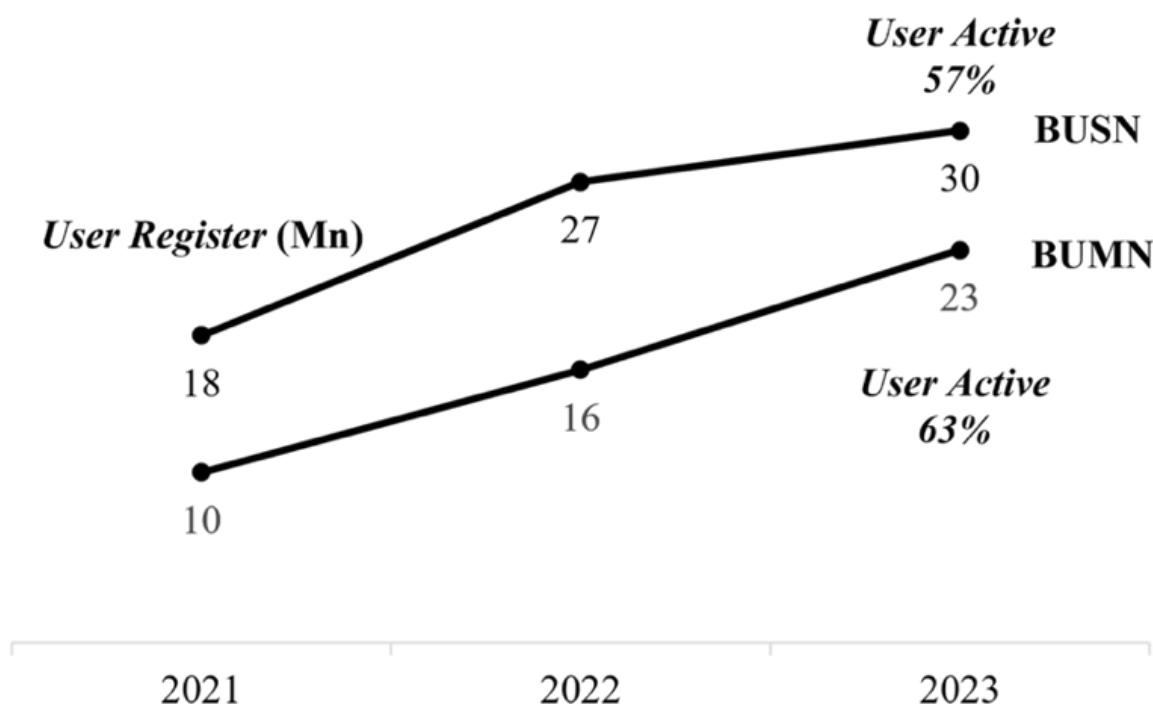


Figure 1.
Comparison of Registered User and Active Users of Digital Transaction Services in BUMN and BUSN BanksSource: Corporate Presentation of BUMN Bank, 2024 [3].

Previous research has extensively explored the use of high-risk technology products, particularly digital transaction services. The Theory of Reasoned Action (TRA) posits that attitudes toward behavior and subjective norms play a pivotal role in determining intentions and behaviors [4]. Building upon this, the Theory of Planned Behavior (TPB) introduces perceived behavioral control as an additional factor influencing intentions and behaviors [5].

The Technology Acceptance Model (TAM) highlights perceived usefulness and ease of use as the primary determinants of users' attitudes toward technology [6]. Extending this model, the Combined

TAM and TPB (C-TAM-TPB) integrates TPB predictors with TAM constructs to form a hybrid framework [7]. Furthermore, the Motivational Model (MM) examines how users perceive technology in terms of achieving desired outcomes [8] while the Model of Personal Computer Utilization (MPCU) emphasizes users' beliefs that technology enhances job performance [9]. The Innovation Diffusion Theory (IDT) explores how innovations are perceived as improvements over their predecessors [10] whereas the Social Cognitive Theory (SCT) focuses on the performance outcomes of behavior [11].

In 2003, Venkatesh, et al. [12] made a significant contribution to technology acceptance research by synthesizing eight existing models into the Unified Theory of Acceptance and Use of Technology (UTAUT). This model predicts behavioral intention and technology usage in organizational contexts, focusing on four key variables: performance expectancy, effort expectancy, social influence, and facilitating conditions. Later, in Venkatesh, et al. [13] expanded the framework into UTAUT2, adapting it for consumer contexts by adding three new variables: hedonic motivation, price value, and habit. This enhancement improved the model's explanatory power, increasing the prediction of behavioral intention from 56% to 74% and technology usage behavior from 40% to 52% [13].

Performance expectancy is defined as the extent to which an individual believes that using digital transaction services will provide benefits in performing banking activities [12]. In Odei-Appiah, et al. [14] conducted a study in Ghana, Africa, and found that performance expectancy positively and significantly influences behavioral intention to use fintech. Similarly, in Bhatnagr and Rajesh [15] examined neobanking services in Delhi NCR, India, and discovered that performance expectancy significantly impacts the intention to use neobanking services. However, a different result was found in a study by De Blanes Sebastián, et al. [16] in Madrid, Spain, which revealed that performance expectancy had no effect on the intention to use the Bizum mobile payment platform.

Effort expectancy is defined as the degree of ease associated with the use of digital transaction services [12]. A study conducted in Iran [17] and found that effort expectancy had a positive and significant influence on the intention to adopt mobile banking. Similarly, a study in Malaysia [18] revealed that effort expectancy positively and significantly impacted behavioral intention to use fintech. However, a study Jegerson in the United Arab Emirates [19] found different results, indicating that effort expectancy did not have a significant effect on behavioral intention to use cryptocurrency.

Social influence is defined as the extent to which an individual perceives that important others believe they should use digital transaction services [12]. A Study in in Delhi NCR, India [15] found that social influence significantly impacts the intention to use neobanking services. Similarly, a study in the United Arab Emirates [19] discovered that social influence significantly affects behavioral intention to use cryptocurrency. However, Ahmad and Yahaya [18] found contrasting results, indicating that social influence does not have a positive and significant effect on behavioral intention to use fintech.

Facilitating conditions are defined as the extent to which an individual believes that banking and technical infrastructure exist to support the use of digital transaction services [12]. A Study in Malaysia [18] found that facilitating conditions positively and significantly influence behavioral intention to use fintech. Likewise, A Study in Delhi NCR, India [15] found that facilitating conditions significantly impact the intention to use neobanking services. In contrast, A Study in Giza, Egypt [20] found that facilitating conditions do not positively influence customers' intention to use e-wallets.

Hedonic motivation is defined as the pleasure or enjoyment derived from using digital transaction services [13]. A Study in Iran [17] found that hedonic motivation positively and significantly influences the intention to adopt mobile banking. Similarly, Study in Ghana, Africa [14] discovered that hedonic motivation has a positive and significant effect on behavioral intention to use fintech. However, Study in Malaysia [18] found contrasting results, indicating that hedonic motivation does not positively and significantly impact behavioral intention to use fintech.

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fintech. Similarly, an examined neobanking services in Delhi NCR, India [15] observed a significant positive impact of performance expectancy on the intention to use neobanking services. However, contrasting findings were reported by De Blanes Sebastián, et al. [16] in Madrid, Spain, which revealed that performance expectancy had no significant effect on the intention to use the Bizum mobile payment platform.

Effort expectancy refers to the degree of ease associated with the use of digital transaction services [12]. A Study in Iran [17] reported a positive and significant relationship between effort expectancy and the intention to adopt mobile banking. Similarly, a Study in Malaysia [18] found that effort expectancy positively and significantly impacts behavioral intention to use fintech. In contrast, in the United Arab Emirates [19] found no significant effect of effort expectancy on behavioral intention to use cryptocurrency, indicating variability in results across different digital services.

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Facilitating conditions are defined as the degree to which an individual believes that adequate banking and technical infrastructure exist to support the use of digital transaction services [12]. A Study in Malaysia [18] found that facilitating conditions positively and significantly influence behavioral intention to use fintech. A Study in India [15] also reported a significant impact of facilitating conditions on the intention to use neobanking services. Conversely, A Study in Giza, Egypt [20] found no significant relationship between facilitating conditions and customers' intention to use e-wallets.

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Price value is defined as the cognitive trade-off customers make between the perceived benefits of digital transaction services and the monetary cost of using them [13]. A Study in Delhi NCR, India [15] found that price value significantly influences the intention to use neobanking services. Similarly, A Study in the United Arab Emirates observed that price value significantly impacts behavioral intention to use cryptocurrency. However, contrasting findings were reported by Baptista and Oliveira [21] in Mozambique, Africa, who concluded that price value does not positively influence behavioral intention to use mobile banking.

Habit is defined as the extent to which individuals perform a behavior automatically due to repeated learning [13]. A Study in Albania [22] found that behavioral intention to use mobile banking is positively influenced by habit. Likewise, a study in Brazil [23] found that habit significantly affects millennials' use of mobile banking applications. However, a study in Delhi NCR, India [15] reported that while habit significantly influences behavioral intention to use neobanking services, it does so in a negative direction, contradicting expected outcomes.

Behavioral intention exists within the conscious mind of consumers, serving as a link between external stimuli and the resulting actions. This structure of intention can automatically trigger positive perceptions and motivations, ultimately leading to specific behaviors [13]. The UTAUT2 framework outlines several key factors that significantly influence users' intentions to adopt technology-based applications. These factors include performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit [15, 17, 18, 23-26]. However, a study

in the United Arab Emirates [19] presented conflicting results in their study on cryptocurrency adoption in, finding that behavioral intention did not significantly influence the actual use of digital transaction services [27]. This inconsistency points to a research gap that requires further investigation. Similarly, a study on mobile banking in Brazil [21] stressed the importance of future research that incorporates customer engagement metrics to make banking activities more enjoyable and interactive for users.

To better understand the inconsistent relationship between intention and behavior, it is crucial to explore the moderating role of customer engagement in product selection and purchasing decisions [28]. Customer engagement refers to the emotional and cognitive connection that customers feel toward specific products, shaped by their individual needs, values, and interests [29]. Engagement can be long-term, fostering sustained relationships with a product, or situational, where engagement is goal-oriented and ends once the objective is achieved. Importantly, responses are considered outcomes of engagement rather than engagement itself [30]. A study Houston and Rothschild [30] demonstrated that customer engagement did not significantly moderate the relationship between behavioral intention and the use of robots in the workplace. This finding highlights the complexity of engagement as a moderating factor.

These insights confirm that customer engagement serves as a valuable moderating variable and adds a novel perspective to the study of behavioral intention in the context of digital transaction services. This approach integrates two prominent theoretical frameworks: the moderating role of customer engagement as introduced by Houston and Rothschild [30] and the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) developed by Venkatesh, et al. [13].

2. Literature Review

This research integrates two distinct theoretical frameworks: the moderating role of involvement as proposed by Houston and Rothschild [30] and the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) introduced by Venkatesh, et al. [13]. The primary framework guiding this study is UTAUT2, an evolution of the original UTAUT, which incorporates eight foundational models related to technology acceptance. These include the Theory of Reasoned Action (TRA), focusing on how attitudes and subjective norms influence behavior; the Theory of Planned Behavior (TPB), which adds perceived behavioral control as a key factor affecting intentions and actions; the Technology Acceptance Model (TAM), emphasizing the importance of perceived usefulness and ease of use in technology adoption; and the Combined TAM and TPB (C-TAM-TPB), which fuses elements from both TPB and TAM to create a comprehensive hybrid model; Motivational Model (MM), which examines how technology enhances user outcomes; Model of Personal Computer Utilization (MPCU), focusing on how technology use can improve work performance; Innovation Diffusion Theory (IDT), which explores how innovations are perceived as improvements over previous technologies; and Social Cognitive Theory (SCT), which addresses performance consequences of behavior.

A study by Venkatesh, et al. [12] made a notable and distinctive impact on the field of technology acceptance by developing the Unified Theory of Acceptance and Use of Technology (UTAUT). This comprehensive framework outlines how individuals adopt and utilize information technology within organizations. UTAUT identifies four primary constructs: performance expectancy (influenced by TAM's perceived usefulness, MM's extrinsic motivation, MPCU's job-fit, IDT's relative advantage, and SCT's outcome expectations); effort expectancy (stemming from TAM's perceived ease of use, MPCU's complexity, and IDT's ease of use); social influence (derived from TRA, TAM, TPB, C-TAM-TPB's subjective norms, MPCU's social factors, and IDT's image); and facilitating conditions (sourced from TPB and C-TAM-TPB's perceived behavioral control, MPCU's facilitating conditions, and IDT's compatibility). These elements shape behavioral intention, which is further influenced by TRA, TPB, and C-TAM-TPB (attitude toward behavior), MM (intrinsic motivation), and MPCU (effect toward use).

In 2012 Venkatesh, et al. [13] extended the original UTAUT framework by developing UTAUT2 to better understand technology acceptance and usage in a consumer context. They introduced three new

constructs—hedonic motivation, price value, and habit—to complement the existing model. Performance expectancy refers to the anticipated benefits of using technology for a specific task, while effort expectancy evaluates how easy the technology is to use. Social influence measures the degree to which individuals feel encouraged or pressured by others to adopt certain technologies, and facilitating conditions reflect users' perceptions of available resources and support to help them use the technology. The added constructs further enrich the model: hedonic motivation focuses on the enjoyment derived from technology use, price value weighs the balance between the cost and benefits of technology, and habit gauges the extent to which users rely on technology automatically due to prior experience [13].

The core theory underpinning this study is customer involvement, which is rooted in consumer learning theory. This theory explores how individuals learn about and interact with products, an essential concept for both researchers and marketers. From a marketing standpoint, consumer learning refers to how people gather knowledge and experiences related to purchasing and consumption, which they later use to guide future buying decisions [31]. Consumer learning is typically classified into two broad categories: Behavioral learning theory – This includes classical and instrumental conditioning, which suggests that behaviors are formed as a response to specific stimuli; Cognitive learning theory – This approach emphasizes that learning happens through active thinking and problem-solving. Moreover, individuals with higher cognitive abilities tend to process more information and are better at integrating data across various product features [31].

The consumer involvement theory is based on the idea that products vary in their personal relevance to consumers, which affects how much effort individuals invest in the decision-making process. Involvement refers to the perceived connection between consumers and products, influenced by their needs, values, and personal interests [29]. Recognizing these consumer preferences has drawn significant attention from marketers and researchers, leading to studies on how consumer involvement moderates product choices, purchasing decisions, and impacts consumer attitudes [28]. This involvement affects the way consumers search for information, process it, and make decisions. Different consumer characteristics lead to varying levels of involvement, which influence their attitudes and behaviors, making consumer involvement a key factor in market segmentation. The theory helps explain the consumption process by differentiating between high and low involvement in both products and services. High-involvement purchases are important to consumers, though not always technologically complex, expensive, or long-lasting. Many high-involvement services also have a hedonic element. Low-involvement purchases, on the other hand, are typically less significant, bought frequently, widely available, low-priced, and often consist of non-durable goods.

Consumer involvement with services and purchasing situations is based on the premise that the level of consumer involvement depends on the degree of personal relevance that a particular service holds for them. Services carry different meanings for different people, but if a service is personally relevant, consumers are more likely to engage in information gathering (knowledge acquisition) about the service itself. The intensity of this involvement differentiates service categories and specific consumer types from one another. High-involvement types that are more enduring are usually accompanied by extensive knowledge about the service category acquired over time [31].

Involvement can be categorized into three main types: enduring involvement, situational involvement, and response involvement. Enduring involvement refers to a long-lasting and consistent connection that a consumer has with a brand or service over time. Situational involvement is temporary and goal-driven, where the consumer's interest lasts only until a specific need is met. After achieving the goal, the involvement ends. In literature, this is also known as Purchase Decision Involvement. Response involvement blends both situational and enduring involvement. It develops from bonds created during situational involvement and focuses on the consumer's reaction, which is an outcome of the involvement process rather than the involvement itself [28].

The creation of innovative services relies heavily on incorporating consumer feedback to shape and define new service concepts. Listening to the consumer's perspective is essential during the development process. When a service is not clearly defined before development starts, it often leads to service failures and significant delays in the development timeline [32]. These theories are valuable to marketers as they help them craft effective messages that influence consumer behavior and encourage purchasing decisions.

3. Aim and Hypothesis

The purpose of this study is to integrate two theoretical frameworks: the moderating role of involvement proposed by Houston and Rothschild [30] and the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) developed by Venkatesh, et al. [13]. This integration offers a novel approach that has yet to be applied in research concerning digital transaction services. The study positions customer involvement as a moderating variable that influences the relationship between behavioral intention and the actual usage behavior of digital transaction services. This approach not only enhances the understanding of causal relationships between variables but also contributes a fresh perspective to the theoretical development of user behavior studies in the field of digital banking transaction services. Based on the concepts and theories developed, the following hypotheses are proposed:

H₁: Performance expectancy positively and significantly influences behavioral intention to use digital transaction services.

H₂: Effort expectancy has a positive and significant effect on behavioral intention to use digital transaction services.

H₃: Social influence positively and significantly impacts behavioral intention to use digital transaction services.

H₄: Facilitating conditions positively and significantly affect behavioral intention to use digital transaction services.

H₅: Hedonic motivation has a positive and significant impact on behavioral intention to use digital transaction services.

H₆: Price value positively and significantly influences behavioral intention to use digital transaction services.

H₇: Habit has a positive and significant effect on behavioral intention to use digital transaction services.

H₈: Behavioral intention positively and significantly affects the actual usage behavior of digital transaction services.

H₉: Customer involvement significantly moderates the relationship between behavioral intention and the actual usage behavior of digital transaction services.

4. Methodology

This research utilizes a quantitative approach and follows a causal explanatory research design as outlined by Creswell and Creswell [33]. The study starts with an extensive review of relevant concepts and prior research, which is then used to formulate hypotheses for empirical testing. The quantitative method is employed to evaluate concepts, validate facts, analyze relationships between variables, and interpret the findings to draw meaningful conclusions. The study is conducted in Bali and focuses on two banks as the subjects of research: one being a State-Owned Bank (BUMN) and the other a National Private Commercial Bank (BUSN). According to data from Bank Indonesia, these two banks had the highest number of registered users for digital transaction services in 2023. Participants in this study include customers from both BUMN and BUSN banks in Bali, selected based on a specific sampling criterion: users who have been utilizing digital transaction services for more than one year. This sampling approach aims to gain deeper insights into the behavior of long-term users of digital transaction services. The research focuses on analyzing customer behavior in the use of digital banking transaction services, exploring multiple factors that influence user actions. These factors include performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, and behavioral intention.

Additionally, the study investigates the role of customer involvement as a moderating variable, which could either enhance or diminish the relationship between behavioral intention and the actual usage behavior of digital transaction services.

5. Results

The assessment of the measurement model (outer model), as illustrated in Figure 2, aims to evaluate the validity and reliability of the indicators that construct the latent variables. This evaluation involves testing for convergent validity, internal consistency (using Cronbach's alpha and composite reliability), and discriminant validity. The convergent validity results, displayed in Table 1, indicate that the factor loading values for all latent variable indicators exceed the recommended threshold of 0.7 (>0.7). This confirms that all indicators effectively represent their corresponding latent variables and meet the required validity criteria. The findings

from the algorithm reduction calculation further demonstrate the relationship between variables and their respective indicators: Performance Expectancy (X1) is measured by five indicators. Effort Expectancy (X2) is measured by three indicators. Social Influence (X3) is represented by three indicators. Facilitating Conditions (X4) includes three indicators. Hedonic Motivation (X5) is reflected by three indicators. Price Value (X6) is measured using three indicators. Habit (X7) is represented by three indicators. Behavioral Intention (Y1) is measured by three indicators. Usage Behavior (Y2) is assessed through three indicators. Customer Involvement (M) is measured by three indicators.

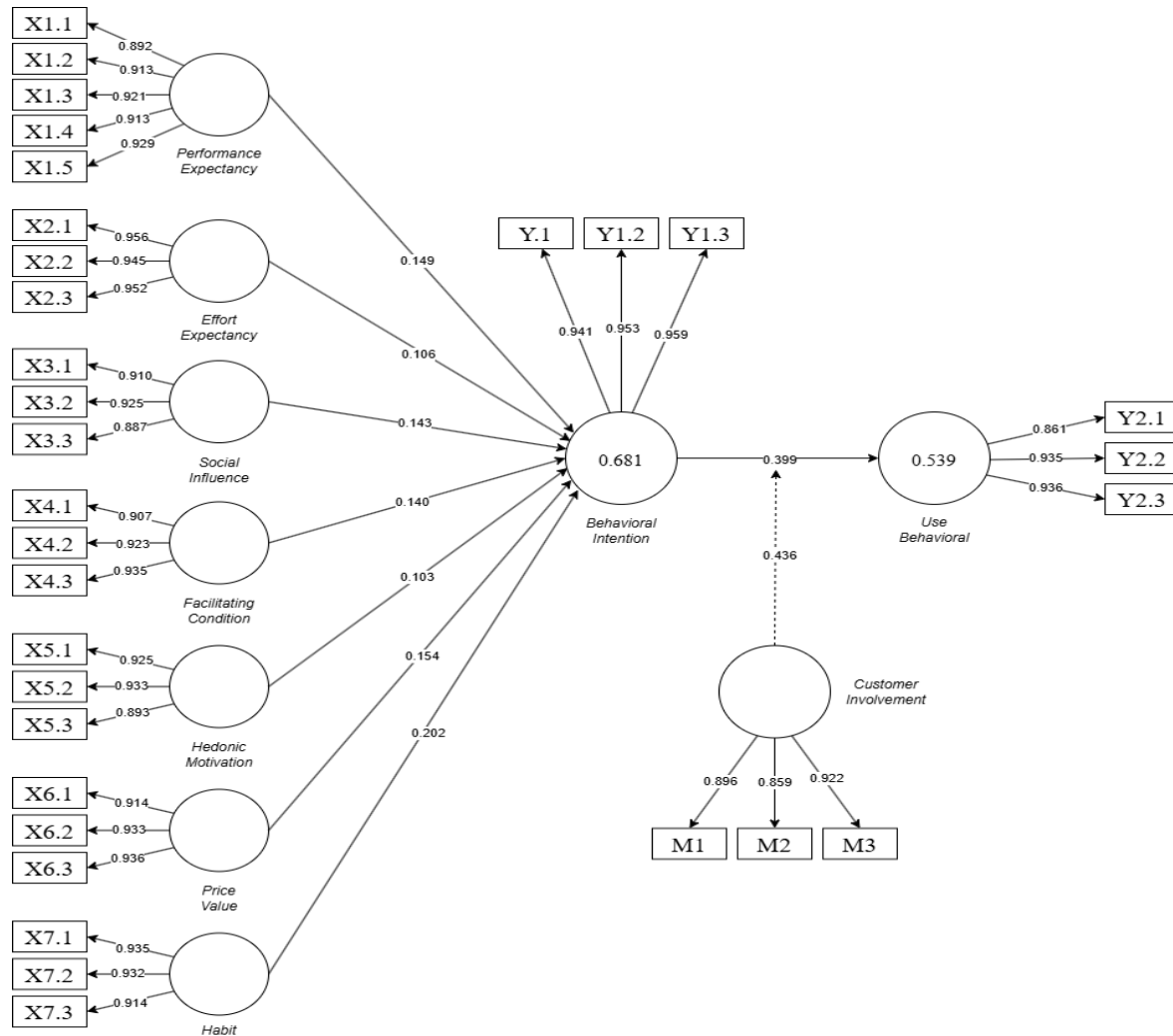


Figure 2.
Outer Model - Calculate Algorithm.

Table 1.
Factor Loading of The Measurement Models.

Variable	Indicator	Loading Factor	Description
Performance Expectancy (X1)	Usefulness (X1.1)	0.892	Valid
	Extrinsic motivation (X1.2)	0.913	Valid
	Job-fit (X1.3)	0.921	Valid
	Relative advantage (X1.4)	0.913	Valid
	Outcome expectations (X1.5)	0.929	Valid
Effort Expectancy (X2)	Perceived simplicity of use (X2.1)	0.956	Valid
	Complexity (X2.2)	0.945	Valid
	Ease of use (X2.3)	0.952	Valid
Social Influence (X3)	Social expectation (X3.1)	0.910	Valid
	Social factors (X3.2)	0.925	Valid
	Image (X3.3)	0.887	Valid
Facilitating Condition (X4)	Perceived self-efficacy (X4.1)	0.907	Valid
	Supporting factors (X4.2)	0.923	Valid
	Compatibility (X4.3)	0.935	Valid
Hedonic Motivation (X5)	Fun (X5.1)	0.925	Valid
	Enjoyable (X5.2)	0.933	Valid
	Entertaining (X5.3)	0.893	Valid
Price Value (X6)	Cost (X6.1)	0.914	Valid
	Benefit (X6.2)	0.933	Valid
	Value (X6.3)	0.936	Valid
Habit (X7)	Routine (X7.1)	0.935	Valid
	Addiction (X7.2)	0.932	Valid
	Necessity (X7.3)	0.914	Valid
Behavioral Intention (Y1)	Belief (Y1.1)	0.941	Valid
	Social norm (Y1.2)	0.953	Valid
	Behavior control perception (Y1.3)	0.959	Valid
Use Behavior (Y2)	Actual of use (Y2.1)	0.861	Valid
	Continuity of use (Y2.2)	0.935	Valid
	Intensity of use (Y2.3)	0.936	Valid
Customer Involvement (M)	Enduring (M1)	0.896	Valid
	Situational (M2)	0.859	Valid
	Response (M3)	0.922	Valid

The results of the internal consistency test, which includes Cronbach's alpha and composite reliability (as shown in Table 2), reveal that seven constructs—performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, price value, habit, and behavioral intention—demonstrate excellent reliability, each with a Cronbach's alpha (CA) value exceeding 0.90 ($CA > 0.90$). In contrast, the constructs social influence, customer involvement, and usage behavior show adequate reliability, with CA values greater than 0.7 ($CA > 0.7$). These results confirm that all constructs maintain sufficient internal consistency.

The composite reliability (CR) test further evaluates the stability and consistency of the combined reliability measurement. According to standard guidelines, each latent variable should account for at least 50% of the variance of its corresponding indicators. To meet this requirement, the factor loadings between the latent variables and their indicators must be greater than 0.7 (>0.7). As detailed in Table 3, all constructs achieved CR values exceeding 0.7 ($CR > 0.7$), confirming that the composite reliability of the indicator sets for each construct is satisfactory.

The cross-loading test results for indicators across all latent variables demonstrate that the correlation values between indicators and their respective latent variables are higher than their correlations with other latent variables. This outcome indicates that the data exhibits strong discriminant validity. Additionally, the Average Variance Extracted (AVE) test, as presented in Table 3, shows that the AVE values for each construct exceed 0.50 ($AVE > 0.50$). These findings further confirm that the model has successfully achieved good discriminant validity. In conclusion, both discriminant validity assessments validate that the latent variables do not experience discriminant issues, meaning all constructs within the model have successfully passed the validity test.

Table 2.
Results of Internal Consistency Reliability Testing.

Variable	Cronbach's Alpha	Composite Reliability	Description
Performance Expectancy (X_1)	0.950	0.962	Reliable
Effort Expectancy (X_2)	0.947	0.966	Reliable
Social Influence (X_3)	0.893	0.934	Reliable
Facilitating Condition (X_4)	0.912	0.944	Reliable
Hedonic Motivation (X_5)	0.906	0.941	Reliable
Price Value (X_6)	0.919	0.949	Reliable
Habit (X_7)	0.918	0.948	Reliable
Behavioral Intention (Y_1)	0.947	0.966	Reliable
Customer Involvement (M)	0.872	0.922	Reliable
Use Behavior (Y_2)	0.897	0.936	Reliable

Table 3.
Average Variance Extracted (AVE).

Variable	Average Variance Extracted (AVE)	Description
Performance Expectancy (X_1)	0.835	Valid
Effort Expectancy (X_2)	0.904	Valid
Social Influence (X_3)	0.824	Valid
Facilitating Condition (X_4)	0.850	Valid
Hedonic Motivation (X_5)	0.841	Valid
Price Value (X_6)	0.861	Valid
Habit (X_7)	0.860	Valid
Behavioral Intention (Y_1)	0.905	Valid
Customer Involvement (M)	0.797	Valid
Use Behavior (Y_2)	0.830	Valid

The structural model (inner model) is assessed using four validation metrics: path coefficient, t-test results (t-statistic), R-squared, and Q-squared. These metrics evaluate hypotheses by analyzing statistical significance. The path coefficient reflects the strength of connections between variables. A path coefficient is deemed statistically significant if the calculated t-value surpasses the critical threshold of 1.96 at a 5% significance level ($p\text{-value} < 0.05$), as shown in Table 4.

Table 4.
Path Coefficients: Mean, STDEV, T-Values, P-Values.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Description
X1 → Y1	0.149	0.146	0.061	2.466	0.014	Significant
X2 → Y1	0.106	0.108	0.054	1.951	0.052	Not Significant
X3 → Y1	0.143	0.138	0.061	2.334	0.020	Significant
X4 → Y1	0.140	0.138	0.065	2.131	0.034	Significant
X5 → Y1	0.103	0.104	0.057	1.798	0.073	Not Significant
X6 → Y1	0.154	0.151	0.074	2.078	0.038	Significant
X7 → Y1	0.202	0.209	0.072	2.783	0.006	Significant
Y1 → Y2	0.399	0.399	0.065	6.156	0.000	Significant
Y1*M → Y2	0.096	0.096	0.042	2.274	0.023	Significant

The R^2 value (Adjusted R-squared) is utilized to evaluate the extent to which the customer involvement variable accounts for the variability in behavioral intention and actual usage behavior. According to the calculation results presented in Table 5, the R^2 value for behavioral intention is 0.676, indicating that 67.6% of the variability in behavioral intention is explained by the variables performance expectancy, social influence, facilitating conditions, price value, and habit. This level of explanation falls within the strong/substantial category, while the remaining 32.4% is influenced by other, unaccounted-for variables. For actual usage behavior, the R^2 value is 0.535, which suggests that 53.5% of the variation in actual usage behavior is explained by both behavioral intention and customer involvement. This level of influence is categorized as moderate, with the remaining 46.5% being attributed to other variables not included in the model.

Table 5.
Quality Criteria: R Square (R^2).

Variable	R Square	R Square Adjusted	Description
Behavioral Intention (Y1)	0.681	0.676	Substantial
Use Behavior (Y2)	0.539	0.535	Moderate

The Q-Square Predictive Relevance (Q^2 -test) is used to assess how well the observed values generated by the model match the estimated parameters.

Formula: $Q^2 = 1 - (1 - R1^2)(1 - R2^2) \dots (1 - Rp^2)$

$Q^2 = 1 - (1 - 0.681^2)(1 - 0.539^2)$

$Q^2 = 1 - 0.380$

$Q^2 = 0.620$

The Q^2 value ranges from $0 < Q^2 < 1$, where a value closer to 1 indicates a better model. The Q^2 calculation result of 0.620 suggests that the structural model (inner model) generated in this research analysis can be categorized as good.

6. Discussion

This study presents an integration of the UTAUT2 Model with Customer Involvement as a moderating factor, introducing a fresh perspective on the adoption of digital transaction services. It merges the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), formulated by Venkatesh, et al. [13] with the customer involvement concept from Houston and Rothschild [30]. This integration highlights how customer involvement can strengthen the connection between behavioral intention and actual usage behavior in digital transaction services. The findings demonstrate that customer involvement not only reinforces the link between intention and actual use but also shows that when customers find personal relevance and importance in using digital transaction services, it

significantly promotes consistent and repeated usage. This suggests that the higher the level of customer involvement, the more likely users will continue using these services regularly. Overall, the study provides new insights into the factors influencing the adoption of digital transaction services in Bali. By merging the UTAUT2 model with the customer involvement framework, the research offers a deeper understanding of user behavior and provides a solid basis for creating effective marketing strategies and policies to enhance the digital banking ecosystem.

The study contributes to the advancement of theories related to digital transaction service usage by confirming the relevance of the UTAUT2 model in the context of digital banking and emphasizing the role of customer involvement as a key moderating factor. It supports the notion that performance expectancy, social influence, facilitating conditions, price value, and habit significantly shape behavioral intention toward adopting digital transaction services. In particular, the research highlights that users consider factors such as tangible benefits, efficiency, and service reliability before deciding to use digital transaction technology. The findings also reinforce the importance of customer involvement as a moderating variable that enhances the relationship between behavioral intention and actual use behavior. This supports and expands the Consumer Involvement Theory by Houston and Rothschild [30] showing that personal relevance in using technology boosts the consistency of service usage and ensures long-term engagement with digital transaction services. Thus, the integration of UTAUT2 with customer involvement introduces a novel approach to understanding user behavior in digital services, enriching existing theoretical models and offering valuable insights into consumer behavior in the digital transformation era.

This research offers several practical recommendations for improving digital transaction services, particularly in the banking sector in Bali. The findings emphasize strategies to increase both the adoption and continued use of digital services among customers, including enhancing the perceived benefits of digital services, developing community-based marketing strategies, improving digital infrastructure and providing strong technical support, optimizing value-added programs to attract and retain customers, ensuring a consistent and seamless customer experience, implementing effective marketing communication strategies, and strengthening personal branding and building customer trust. By applying these strategies, banks can improve customer engagement with digital transaction services, giving them a competitive edge in the rapidly evolving banking industry. An emphasis on innovation, service personalization, and the optimization of the digital ecosystem will be crucial in increasing customer involvement and creating a better overall digital transaction experience.

The findings of this study provide several practical implications for the development of digital transaction services, particularly in the banking sector in Bali. These implementations are aimed at enhancing the adoption and sustained use of digital transaction services among customers. The practical implications include the enhancement of digital service benefits, community-based marketing strategies, improvement of digital infrastructure and technical support, optimization of value-added programs for customers, consistency in customer experience, effective marketing communication strategies, and enhancement of personal branding and customer trust. By understanding and applying these strategies, banks can strengthen the adoption and usage of digital transaction services, enabling them to compete effectively in the increasingly competitive banking industry. An innovation-driven approach, service personalization, and digital ecosystem optimization will be key factors in increasing customer involvement and creating a more optimal digital transaction experience.

7. Conclusion

This study concludes that performance expectancy, social influence, facilitating conditions, price value, and habit have a significant effect on behavioral intention, while effort expectancy and hedonic motivation do not. Additionally, behavioral intention significantly influences actual usage behavior. Furthermore, customer involvement is identified as a moderator that strengthens the relationship between behavioral intention and actual usage behavior of digital banking transaction services in Bali,

indicating that higher customer involvement enhances the influence of behavioral intention on actual usage behavior. Moreover, customer involvement is found to be a quasi-moderated variable, meaning that besides acting as a moderator, it also serves as a predictor of digital banking transaction service usage behavior in Bali when interacting with behavioral intention.

This study supports the relevance of The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) developed by Venkatesh, et al. [13] in explaining the adoption of digital transaction technology in Bali. The UTAUT2 model, which includes performance expectancy, social influence, facilitating conditions, price value, and habit, has been proven to play a role in shaping behavioral intention toward digital transaction services. In this context, users tend to consider tangible benefits, efficiency, and service reliability before deciding to adopt digital transaction technology.

The study findings indicate that customer involvement strengthens the relationship between behavioral intention and actual usage behavior of digital transaction services. This discovery enriches Consumer Involvement Theory [30] in the digital services context, where the level of relevance and personal importance in using technology contributes to increasing the consistency of digital service usage. Thus, customer involvement not only influences the initial decision to use digital services but also ensures continuity in digital transaction service usage.

Therefore, this study not only supports existing theoretical models but also introduces a new approach relevant to understanding user behavior in digital banking transaction services. The integration of the UTAUT2 model with customer involvement theory provides a new perspective for research on digital transformation and consumer behavior.

Institutional Review Board Statement:

This study involved human participants and was conducted in accordance with ethical standards. All respondents were fully informed about the purpose and nature of the research, and their participation was entirely voluntary. Informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity were ensured throughout the study.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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