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Article

Model Development of Millennial Intentions Using Digital Banking Platforms in Indonesia (Extended the Unified Theory of Acceptance and Use of Technology-3 (UTAUT-3) with Financial Literacy)

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Abstract: Advancements in digital banking technology provide financial management features that range from simple savings and transactions to more complex levels like stock investing, gold, and insurance. Digital banking demands digital literacy and financial literacy competence from its users, especially for the target segment of the millennials in using these features. However, banks still face the challenge of increasing Indonesian millennial financial literacy. On the other hand, banking rivalry in offering the finest digital banking services to its clients forces banks to develop the correct strategy for enhancing service quality and boosting customer satisfaction and loyalty to digital banking services. The aim of this research is to develop a model that is capable of representing the millennial intensity of adopting digital banking technology. In this study, the author combines three theoretical models relevant to digital banks: the Unified Theory of Acceptance and Use of Technology-3 (UTAUT-3) and Financial Literacy. Analysis of the model is carried out using the Structural Equation Modelling (SEM) method to find out the structural relationships between the variables used in order to determine the validity of the built model and become a recommendation in the preparation of the digital banking development strategy. 532 Indonesian millennials were surveyed using the purposive sample technique, and Partial Least Squares Structural Equation Modelling (PLS-SEM) was utilized for analysis. Result indicated that performance expectations, effort expectations, social influence, facilitating conditions, habits, price values, hedonic motivation, and personal innovativeness have a significant positive effect on the behavioural intentions of use digital banking. Facilitating conditions, habits and personal innovativeness have a significant positive effect on the use behaviour of digital banking. Financial knowledge, financial attitude, and financial skill have a significant positive effect on the financial behaviour of digital banking customers. Financial behaviour has a significant positive effect on the digital banking customer's behavioural intention. Financial behaviour significantly positively influences the usage behaviour of digital banking customers. The structural model results provide highly explanatory power, with R^2 values of 0.640 for financial behaviour and the model's Q^2 value 0.403 has large predictive relevance on financial behaviour, confirming the expanded UTAUT-3's effectiveness in predicting digital banking adoption behaviours.
Keywords: Unified Theory of Acceptance and Use of Technology-3 (UTAUT-3), Financial Literacy, Digital Banking Adoption, Structural Equation Modelling (SEM), Millennials Indonesia

1. Introduction

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Digital banking is using technology to facilitate seamless banking transactions. Digital banking is an electronic banking service designed to optimize the use of client data in order to serve consumers more conveniently, swiftly, and according to their demands. It may also be done independently by customers while maintaining security (the Indonesian Financial Services Authority (OJK), 2021). Research by Ashoka (n.d.) mentions that the majority of users of digital banking applications are millennials. Bolton et al. (2013) categorizes generation Y, sometimes known as the Millennial Generation, as those born during 1981 to 1999. According to the Indonesian Central Statistics Agency's 2020 Population Census, there are 69.38 million millennials in Indonesia, accounting for 25.87 percent of the overall population.

With the highest purchasing power and a reputation for being the most innovative generation, millennials are constantly dependent on mobile devices like smartphones (Ngubelanga & Duffett, 2021). Millennials have seen a technological revolution that has impacted their true selves, media consumption, and digital lives (Aikat, 2019). This generation relies extensively on instant communication technology such as email, SMS, instant messaging, and social media platforms like Facebook and Twitter. In other terms, Generation Y refers to the generation that grew up amid the internet boom (Lyons, 2004). The ease of access to information influences their attitudes, lives, and financial literacy abilities. As a result, the millennial generation is regarded as having the highest level of digital literacy among prior generations.

However, the millennial generation is still seen to lack financial literacy. The 2024 OJK National Financial Literacy and Inclusion Survey shows that millennials aged 26-35 have a literacy rate of 74.82 percent, while millennials aged 36-50 have a literacy rate of 71.72 percent. This means that if there are 100 millennial customers of investment products, only 70 millennials have adequate knowledge about these investment products. Financial literacy influences formal bank account holdings, engagement in financial markets, insurance, pension plan participation, and credit card ownership (Xu et al., 2022). According to Bhushan and Medury (2014), financial literacy has gotten more difficult in recent years as a result of the launch of several new financial products. The discrepancy between the rapid growth of digital financial services and the general public's lack of financial literacy has the potential to have a detrimental impact.

1.2. Aim of the Study

The goals that the author aims to achieve in this research are to develop a model that can represent millennials' intentions in adopting digital banking platform technology and to identify the factors influencing the intention of millennial customers in using digital banking platforms. Additionally, as a follow-up to the author's observations as a banking practitioner regarding the interest of millennial customers in opening accounts digitally through digital banking platforms, this study will be used as recommendations for the management of the company where the author works in developing digital banking in order to maximize the millennial target segment's use of digital banking.

2. Literature review and conceptual framework

To improve study outcomes in evaluating technological adoption, the research model will be adjusted to reflect the research environment. Hung et al. (2009) created a model of financial literacy that includes four dimensions: financial knowledge, financial skills, perceptual knowledge, and financial behaviour. Financial literacy refers to the link that exists between these characteristics. Atkinson (2012) from the OECD states that financial literacy is a combination of financial knowledge, financial attitude, and financial behaviour. The model aligns with the views of Lusardi and Mitchell (2013), Xiao et al. (2014), and Khan et al. (2017), who state that financial literacy includes knowledge, skills, and financial attitudes that influence an individual's financial behaviour. These financial literacy models demonstrate how financial skills, financial knowledge, and financial attitudes impact financial behaviour. Financial literacy encompasses knowledge, skills, attitudes, and behaviors needed for informed decision-making and effective personal money management (Mancone et al., 2024).

The implementation of technological advances into the finance industry has lately sparked interest in the technical element of financial literacy (Rehman & Mia, 2024). Mobile banking success indicators may be described

as the good attitude toward and recurring usage of mobile banking applications (Ghobakhloo & Fathi, 2019). Users in Sub-Saharan Africa, particularly Nigeria, embrace mobile banking technology based on utility expectation (perceived usefulness), effort expectation (perceived ease of use), and also social influence expectation (friends' and relatives' opinions) (Siano et al., 2020).

Leby Lau (2016) discovered numerous variables that might explain the millennial generation's interest in using mobile banking, including performance expectation, effort expectancy, risk perception, and social impact. According to Venkatesh (2003), the UTAUT theory has the advantage of being able to explain that individual differences have an impact on technology usage by understanding the relationship between perceived usefulness, ease of use, and the intention to adopt a particular technology. Farooq et al. (2017a) introduced the UTAUT-3 Technology Acceptance and Use paradigm as an addition to the UTAUT-2 paradigm. This model incorporates eight factors that influence technology acceptance: performance expectancy, effort expectancy, social influence, facilitating conditions, habit, hedonic motivation, price value, and personal innovativeness in IT, which was introduced as the eighth element.

2.1. Extended UTAUT-3 with Financial Literacy

In this study, UTAUT-3 will be modified with a financial literacy model to fit the research context, with the hope of providing better results. There has never been a study on the construction of a millennial intention model for utilizing digital banking platforms by merging three theoretical models: the Unified Theory of Acceptance and Use of Technology-3 (UTAUT-3) and Financial Literacy.

2.2. Hypothesis Development

Hypothesis 1 (H1).

Performance Expectancy (PE) has a significant positive effect on Behavioural Intention (BI). Performance expectation is the degree to which a person feels that employing technology will help banking operations (Venkatesh et al., 2003b). The study discovered that performance expectancy, task technology fit, social influence, and facilitating conditions all had a substantial impact on user adoption (Zhou et al., 2010). Performance expectation is a key aspect that influences adoption intentions (Luo et al., 2010). Performance expectancy elements impact consumers' behavioural intention towards FinTech services (Idrees & Ullah, 2024). Technology adoption considerations of using digital financial solutions include perceived usefulness (Neves et al., 2023). Performance expectation is strongly connected to millennials' intention to use mobile banking apps (Thusi & Maduku, 2020). During the C-19 pandemic, performance expectation had a substantial impact on M-payment acceptance (Abrahim Sleiman et al., 2023). In India, individuals' intentions to utilize cashless transactions are most strongly predicted by their performance expectations (Raj et al., 2024). In Sweden, performance expectancy is a predictor of customers' behavioural intention to use e-banking technology (Abikari et al., 2023).

Hypothesis 2 (H2).

Effort Expectancy (EE) has a significant positive effect on Behavioural Intention (BI). Effort expectation is the level of ease of using technology for the user (Venkatesh et al., 2003b). This suggests that the anticipation of effort is likely to have a significant impact on the intent to use. Elements of effort expectation influence users' behavioural intentions toward FinTech services in Karachi, Pakistan (Idrees & Ullah, 2024). Adoption and utilization of digital financial services were influenced by ease of use (Neves et al., 2023). The behavioural intention of Greek Gen Z and Gen X to use mobile banking apps is positively correlated with their expectation of effort (Dendrinos & Spais, 2023). Effort expectancy has a substantial effect on mobile banking application adoption intentions (Rahman et al., 2024).

Hypothesis 3 (H3).

Social Influence (SI) has a significant positive effect on Behavioural Intention (BI). Social influence is the degree to which a person believes that others, particularly family and friends, will influence their use of technology (Venkatesh et al., 2003b). The study indicated that social influences are independent determinants influencing behavioural intentions to adopt FinTech (Idrees & Ullah, 2024). Consumers in the United States' intention to use

mobile payment services is mostly affected by their views of social influence (Jung et al., 2020). Social influence showed a direct effect on behavioral intentions (Abu-Taieh et al., 2022). In the Philippines, social influence has a direct impact on millennials and generation Z's intention to use e-wallets (Belmonte et al., 2024). In China, social influence has a beneficial impact on the behavioural intention of using contactless financial services (Chen et al., 2023).

Hypothesis 4 (H4).

Hedonic Motivation (HM) has a significant positive effect on Behavioural Intention (BI). Hedonic motivation is the joy or delight derived from using a technology (Venkatesh et al., 2012). In Ghana, hedonic considerations have a substantial impact on university students' continuous intention to use mobile money services for fee payment (Kelly, 2024). Hedonic motivation has a substantial effect on the intention to use the Mobile Banking apps (Kala Kamdjoug et al., 2021). Hedonic motivation has a substantial impact on behavioral intention of Jordanian bank customers (Alalwan et al., 2018). Based on data obtained from a growing market in Romania, hedonic motivation is the biggest predictor of customers' behavioral intentions for keeping using m-commerce (Vinerean et al., 2022).

Hypothesis 5 (H5).

Price Value (PV) has a significant positive effect on Behavioural Intention (BI). Venkatesh et al. (2012) defines price value as the advantage felt by users from the usage of technology in comparison to the expenditures spent. Price value has a considerable effect on Jordanian customers' internet banking behavioural intentions (Alalwan et al., 2018). Price value has a significant impact on Jordanians' long-term intentions to use e-wallets (Zaid Kilani et al., 2023). Consumer behavioural intent has been connected to price value among their British counterparts (Merhi et al., 2020). In England, the price value of mobile banking was a strong predictor of its adoption (Merhi et al., 2019).

Hypothesis 6 (H6).

Facilitating Condition (FC) has a significant positive effect on Behavioural Intention (BI). The facilitating condition shows that a person believes in the presence of infrastructure or facilities that will make it simpler for them to use technology (Venkatesh et al., 2003b). The important aspects that impact the behavioural intention of consumers towards FinTech services was facilitating conditions (Idrees & Ullah, 2024). Facilitating conditions are highly related with the intention of millennials to utilize mobile banking applications (Thusi & Maduku, 2020). Facilitating conditions were a strong factor of digital banking intentions usage (Tariq et al., 2024).

Hypothesis 9 (H9).

Facilitating Condition (FC) has a significant positive effect on Use Behaviour (UB). Facilitating conditions have a significant direct influence on millennials' use of mobile banking applications (Thusi & Maduku, 2020). The results show that favourable conditions are highly connected to the actual use of Fintech apps (Tariq et al., 2024). Users' facility conditions favourably encourage them to utilize financial technology (Sultana et al., 2023). Facilitating conditions have been demonstrated to have a considerable influence on Saudi bank customers' real use behaviour (Baabdullah et al., 2019).

Hypothesis 7 (H7).

Habit (HB) has a significant positive effect on Behavioural Intention (BI). Habits strongly correlate with millennials' intention to use mobile banking services (Thusi & Maduku, 2020). Habit is the biggest indicator for using the Bizum mobile payment platform, with 75% approval among young online banking customers (de Blanes Sebastián et al., 2023). The findings for Turkish electronic banking customers reveal that habit is favourably and strongly related to behavior intention (Khan et al., 2022). Habit affected the behavioural intention of Lebanese and British consumers to utilize mobile banking services (Merhi et al., 2019).

Hypothesis 10 (H10).

Habit (HB) has a significant positive effect on Use Behaviour (UB). Habit was a higher predictor of usage than intention (Farooq et al., 2017a). Habits will be revealed by the consequences of earlier encounters (Venkatesh et al., 2012). Habit has a high level of significance for Turkish online banking consumers, and it effects Use Behaviour directly, without the mediation of Intention (Khan et al., 2022). Habit elements might indicate the usage of Saudi M-Banking customers (Baabdullah et al., 2019).

Hypothesis 8 (H8).

Behavioural Intention (BI) has a significant positive effect on Use Behaviour (UB). The UTAUT2 paradigm emphasizes the importance of behavioural intention in determining technology usage (Venkatesh et al., 2003b). The use of mobile banking apps by millennials is heavily influenced by their behavioural intentions (Thusi & Maduku, 2020). Continued Usage Intention was shown to be directly related to Continuance Usage behaviour (Zaid Kilani et al., 2023). Behavioural intentions favourably impact them to utilize financial technology (Sultana et al., 2023). During the COVID-19 epidemic, behavioural intentions have a major impact on actual mobile payment service usage in India (Nandru et al., 2023).

Hypothesis 11 (H11).

Personal Innovativeness (PI) has a significant positive effect on Behavioural Intention (BI). Personal innovativeness is individuals' willingness to experiment with new information technologies (Agarwal & Prasad, 1998). Personal innovativeness affects behavioural intention (Truc, 2024a). The study indicated that personal innovativeness has a significant influence on intentions to adopt mobile banking apps (Rahman et al., 2024). Personal innovativeness has an impact on usage intentions (Thakur & Srivastava, 2014). Personal innovativeness has a statistically significant beneficial influence on the intention of Indian consumers to use mobile banking (Kumar et al., 2020).

Hypothesis 12 (H12).

Personal Innovativeness (PI) has a significant positive effect on Use Behavior (UB). Personal innovativeness is a human characteristic that fosters a desire and willingness to experiment with new advances in the world of information technology (Farooq et al., 2017b). Personal innovativeness acts as a strong indirect driver of customer use behaviour via attitude and behavioral intention (Patil et al., 2020). Customer innovativeness was found to be a strong indicator of Fintech use in Indonesia (Setiawan et al., 2021a).

Hypothesis 13 (H13).

Financial Behaviour (FB) has a significant positive effect on Behavioural Intention (BI). According to Xiao (2008), financial behavior refers to individual behavior connected to money management. Individuals who exhibit a high level of financial behavior are better off financially (Rahman et al., 2021). Financial practice in terms of digital technology and online platforms positively impacts behavioral intentions (Marhadi et al., 2024). Formal financial transactions influence the adoption of digital payments (Andaregie et al., 2024). CLT is predicted by income and experience.

Hypothesis 14 (H14).

Financial Behaviour (FB) has a significant positive effect on Use Behaviour (UB). Financial behavior refers to the acts that individuals perform with their cash (Zaimovic et al., 2023). Financial practice related to digital technologies and online platforms has a favorable influence on use behavior (Marhadi et al., 2024). The COVID-19 lockdown in Greece affected financial behavior in the usage of internet banking (Bechlioulis & Karamanis, 2023).

Hypothesis 15 (H15).

Financial Knowledge (FK) has a significant positive effect on Financial Behaviour (FB). Financial knowledge refers to an individual's comprehension of topics like saving, investing, and interest rates (Zaimovic et al., 2023). China Household Financial Survey Data (CHFS) from 2015 and 2017 reveal that financial knowledge has a strong present, long-term, and dynamic impact on financial behavior (Xu et al., 2022). Financial knowledge has a favorable

impact on the desired financial behaviors of credit card use (Chen et al., 2023). In Brazil, Financial knowledge of university students has a favorable influence on financial behavior (Caroline et al., 2016).

Hypothesis 16 (H16).

Financial Skill (FS) has a significant positive effect on Financial Behaviour (FB). Financial skills are required for well-planned behavior and educated decision-making (Shah et al., 2024). The research conducted in Italy reveals that financial skills are crucial to determining financial behavior (Marconi et al., 2024). In a study of Indian female entrepreneurs using social media, financial skills such as analytics and budgeting were found to be important predictors of financial decision-making ability (Peter et al., 2024).

Hypothesis 17 (H17).

Financial Attitude (FA) has a significant positive effect on Financial Behaviour (FB). The term "financial attitude" refers to an individual's views, sentiments, and values toward money, which can have a considerable influence on decisions regarding finances (Zaimovic et al., 2023). According to research in India's National Capital Region (NCR), the effect of financial attitude on financial behavior is strong (Kumar et al., 2024). There is a significant positive relationship between financial attitude and financial behavior intention (Sam et al., 2022). Financial attitude is an essential factor for improving people's financial behavior (Çera et al., 2021).

Table 1. Demographic characteristics of respondents (N = 532)

Attribute	Description	Number	Percentage
Region	Sumatra	111	21%
	Java	210	39%
	Kalimantan	81	15%
	Sulawesi	76	14%
	Bali and Nusa Tenggara	54	10%
Gender	Female	366	69%
	Male	166	31%
Experience with Digital Banking	< 1 year	34	6%
	1-2 years	165	31%
	2-5 years	214	40%
	> 5 years	119	22%
Age Range	28 to 31 years	180	34%
	32 to 35 years	112	21%
	36 to 39 years	132	25%
	40 to 44 years	108	20%
Education Levels	High School/Equivalent	98	18%
	Diploma	86	16%
	Bachelor's Degree	257	48%
	Master's Degree	88	17%
	Doctorate	3	0.56%
Employment Status	Housewife	190	36%
	Civil Servant / Army / Police / SOE / BUMD	98	18%
	Private Employee	98	18%
	Entrepreneur	150	28%

Number of Bank Accounts	1 bank account	17	3%
	2 bank accounts	312	59%
	3 bank accounts	203	38%
Household Expenses / Month	USD 200 – USD 500	115	22%
	> USD 500	417	78%

3. Methodology

The authors employed structural equation modelling (SEM), a theoretical and statistical method, to investigate the factors that impact digital banking adoption. This part divided the approach into three components. First, respondents' demographics are collected. Second, the survey research instrument design is discussed. Third, the structural equation modelling measurement model is evaluated.

3.1. Respondents

The researchers performed an online survey of Indonesian consumers to investigate the many factors that impact their adoption of digital banking. Each of the respondents had prior experience with digital banking, ensuring the reliability of the data acquired. According to Hair and Alamer (2022), SEM models with more than eight latent variables require at least 500 respondents to yield a generalized result. The researcher therefore surveyed 532 millennials.

The study's location is represented by a sample of Indonesian banking customers, the majority of whom live in Java (39%) and have 2 to 5 years of experience with digital banking technologies. The bulk of respondents (69%) are women. These demographics are related to the high proportion of respondents (78%) who spend more than USD 500 each month as detailed in Table 1.

Table 2. The Construct and measurement items of the extended model

Construct	Code	Indicator Name	Indicator Item Statement	Reference
Performance Expectancy (PE)	PE1	Perceived usefulness	Digital banking is really useful in my daily life.	Venkatesh et al., 2012
	PE2	Extrinsic motivation	Digital banking enhances my performance efficiency.	
	PE3	Job-fit	Digital banking enables me to solve my difficulties quickly.	
	PE4	Relative advantage	Digital banking boosts my productivity.	
Effort Expectancy (EE)	EE1	Perceived ease of use	Digital banking is simple to learn and understand.	Venkatesh et al., 2012
	EE2	Complexity	Digital banking is simple to operate.	
	EE3	Ease of use	Digital banking requires less energy and time to operate.	
Social Influence (SI)	SI1	Subjective Norm	People around me persuaded me to utilize digital banking.	Venkatesh et al., 2012
	SI2	Social Factor	People that matter to me recommended that I utilize digital banking.	
	SI3	Image	People around me who utilize digital banking appear to be more trendy (following a trend).	
Facilitating Conditions (FC)	FC1	Perceived behavioural Control	I am sufficiently knowledgeable to utilize digital banking.	Venkatesh et al., 2012

	FC2	Facilitating conditions	The existing digital banking infrastructure is already widely used.	
	FC3	Compatibility	If I have any problems with digital banking, I may get assistance from specialists.	
Hedonic Motivation (HM)	HM1	Fun	I am pleased when I use digital banking.	Venkatesh et al., 2012
	HM2	Entertain	I feel at ease utilizing digital banking.	
	HM3	Interest	I feel like I love utilizing digital banking.	
Price Value (PV)	PV1	Quality	I believe that the cost of digital banking is reasonable.	Venkatesh et al., 2012
	PV2	Price	I believe that Digital Banking's service fees are reasonable for the services provided and obtained.	
	PV3	Value	I am prepared to pay the specified fee to utilize digital banking.	
Habit (HT)	HT1	Prior Use	I am already accustomed to utilizing digital banking.	Venkatesh et al., 2012
	HT2	Addiction	I believe I must continue to use digital banking.	
	HT3	Behaviour to be automatic	If I need to do a transaction, I will use digital banking	
Personal Innovativeness (PI)	PI1	Information Seeking	I wish to learn about the most recent information technology.	Agarwal & Prasad, 1998; Parasuraman & Colby, 2015
	PI2	Experiment	If I hear about the latest Digital Banking technology, I will seek for new ways to apply it.	
	PI3	First Time to Use	Among my friends, I was the first to try the innovative Digital Banking technology.	
	PI4	Information Seeking	I'm interested in learning about the most recent developments in digital banking.	
	PI5	Experiment	In general, I am not hesitant to explore the latest Digital Banking technology.	
Behavioral Intention (BI)	BI1	Repeated Use intentions	I intend to utilize digital banking in the future.	Venkatesh et al., 2012
	BI2	Positive word-of-mouth	I intend to use digital banking in my everyday life.	
	BI3	Service quality	I intend to utilize digital banking for all of my transactions.	
Use Behavior (UB)	UB1	Usage time	I appreciate utilizing digital banking at anytime and anyplace.	Venkatesh et al., 2012
	UB2	Usage frequency	I regularly utilize digital banking.	

	UB3	Use variety	I constantly utilize digital banking for different objectives.	
Basic Financial Knowledge	FK1	Benefit of financial management	I am aware that financial management has several advantages.	Chen & Volpe, 1998; Huston, 2010
	FK2	Handle money	I understand how to safely and rationally handle money.	
Knowledge of Fin. Planning	FK3	Financial planning and budgeting	I understand that financial planning and budgeting have many advantages.	Chen & Volpe, 1998; Mandell & Klein, 2007
	FK4	Financial goals	I understand how to establish short, medium, and long-term financial goals.	
	FK5	Budgets	I understand how to create budgets for financial purchases.	
Knowledge of Expenses/Income	FK6	Revenue sources	I am knowledgeable with a variety of revenue sources.	Chen & Volpe, 1998
	FK7	Income aspects	I understand the aspects that determine income.	
	FK8	Unanticipated expenditures	I am mindful of unanticipated expenditures.	
Knowledge of Money/Assets	FK9	Asset's liquidity	I am familiar with an asset's liquidity.	Chen & Volpe, 1998
	FK10	Net assets	I have a good understanding of net assets.	
	FK11	Time value of money	I know the time value of money.	
Knowledge of Interest Rates	FK12	Interest rates terms	I'm familiar with the terminologies used in interest rates.	Chen & Volpe, 1998
	FK13	Basic calculations	I understand basic interest rate computations.	
	FK14	Compound interest	I understand how compound interest rates are calculated.	
Knowledge of Credit	FK15	Accepting credit factors	I understand the factors that must be focused on before accepting credit.	Chen & Volpe, 1998
	FK16	Loan interest rates	I know how loan interest rates are calculated.	
	FK17	Creditworthiness	I understand the aspects that determine creditworthiness.	
Understanding of Insurance	FK18	Advantages of insurance	I am knowledgeable about the advantages of insurance.	Chen & Volpe, 1998
	FK19	Insurance coverage	I understand how to apply for an insurance coverage.	
	FK20	Insurance premiums	I am knowledgeable about insurance premiums.	
Understanding of Investment	FK21	Short-term investing	I am familiar with short-term investing.	Chen & Volpe, 1998; Huston, 2010
	FK22	Long-term investments	I am knowledgeable about long-term investments.	
	FK23	Investing risks	I am aware of the investing risks.	

Deposit Investing	FK24	Deposit characteristics	I understand deposit characteristics.	Chen & Volpe, 1998
	FK25	Deposit strategies	I am knowledgeable with deposit investing techniques.	
Stock Investing	FK26	Features of shares	I understand the features of shares.	Chen & Volpe, 1998
	FK27	Concept of dividends	I understand the concept of dividends.	
	FK28	Share investment ideas	I am familiar with share investment ideas.	
Bond Investments	FK29	Features of bonds	I understand the features of bonds.	Chen & Volpe, 1998
	FK30	Bond investment approach	I know the bond investment approach.	
	FK31	Interest rates impact	I understand the impact of interest rates on bonds.	
Property Investments	FK32	Features of property	I understand the features of properties for investment.	Chen & Volpe, 1998
	FK33	Property strategies	I understand property investment strategies.	
Personal Finance Orientation	FA1	Budgeting strategy	Budgeting is an important financial strategy.	Marsh et al., 2006; Mien & Thao, 2015
	FA2	Consider and prepare	It is critical to consider and prepare regarding finances.	
	FA3	Maintaining financial records	Maintaining financial records is critical in handling finances.	
Debt Philosophy	FA4	Pawn stuff	I like to pawn stuff for unplanned requirements.	Marsh et al., 2006
	FA5	Accumulating loan	Purchasing raw materials from friends by accumulating loan.	
	FA6	Being in debt	Being in debt to others is natural.	
Financial Security	FA7	Emergency fund	I plan to use my own savings as an emergency fund.	Marsh et al., 2006
	FA8	Predicting financial issues	I'm quite good at predicting my issues.	
	FA9	Bank loan utility	Taking out a bank loan to cover a cash need.	
Evaluating Personal Finance	FA10	Spending reflection	How I spend my money reflects my character.	Marsh et al., 2006
	FA11	Financial situation relation	My financial situation does not affect my connections with others.	
	FA12	Studying about finances	Studying about finances becomes a top focus.	
Planning & Budgeting Skill	FS1	Financial objectives setting	I can set financial objectives (short, medium, and long-term)	Elbogen et al., 2011
	FS2	Unanticipated cost budget	I am able to create a budget for unique and unanticipated costs	

	FS3	Expense/shopping budgets	I can create expense and shopping budgets (daily, monthly, or yearly)	
Technical Fin. Plan Skill	FS4	Maximum spending budget	When allocating funds, I am capable to specify a maximum spending budget.	Elbogen et al., 2011
	FS5	Prioritizing needs	I am capable of prioritizing the most critical requirements first in my purchase budget.	
	FS6	Examine risk of debt	Before making a choice, I am able to examine the risks associated with taking out debt or credit.	
Savings Activities Skill	FS7	Savings period	I save on a regular basis or periodically.	Elbogen et al., 2011
	FS8	Saving Habit	Any unused funds or unexpected revenue are instantly saved.	
Fin. Planning Behavior	FB1	Create goals	Create financial goals (short, medium, and long-term).	Perry & Morris, 2005; Dew & Xiao, 2013
	FB2	Extraordinary event budget	Create a budget for extraordinary and unexpected events.	
	FB3	Expenditures & budgets	Create expenditures and budgets (daily, monthly, or annually).	
Techniques for Fin. Plans	FB4	Maximum expenditure budget	Determine the maximum expenditure budget while distributing funds.	Perry & Morris, 2005; Xiao et al., 2014
	FB5	Prioritize budget needs	Prioritize the budget's most vital needs first.	
	FB6	Examine risk of debt	Before making a choice, I am able to examine the risks associated with taking out debt or credit.	
Saving Money Behavior	FB7	Regular scheduled saving	Save on a regular or scheduled basis.	Perry & Morris, 2005; Woodyard, 2013
	FB8	Save excess money	Save any excess money or unexpected cash right away.	
Insurance & Pensions	FB9	Take out insurance	Take out insurance to protect against potential risks.	Perry & Morris, 2005; Woodyard, 2013
	FB10	Retirement fund	Save money for retirement fund	
	FB11	Unexpected cash reserve	Provide cash especially for unanticipated expenditures.	
Investment & Debt Bills	FB12	Save assets for investment	Saving assets for future investment.	Perry & Morris, 2005; Woodyard, 2013
	FB13	Cautious credit use	Take caution while obtaining investment credit or debt.	
	FB14	Schedule bill payments	Pay monthly bills (electricity and water) on schedule.	

Monitoring Fin. Management	FB15	Record income & expenses	Maintain a record of all daily income and expenses.	Perry & Morris, 2005; Woodyard, 2013
	FB16	Teach financial management	Teach the family proper financial management in phases.	
	FB17	Discuss financial issues	Discuss financial issues with family members.	
Evaluation of Fin. Mgmt	FB18	Compare income & expenses	Compare income and expenses.	Perry & Morris, 2005; Woodyard, 2013
	FB19	Evaluate expenses	Evaluate expenses using the financial plan that has been developed.	
	FB20	Modify financial plan	Modify ineffective financial planning.	

3.2. Research Instrument Design

Based on the conceptual framework, the researcher developed constructs and measurement items as shown in Table 2. The questionnaire for the combined UTAUT-3 and financial literacy was created utilizing relevant research. All factors were measured using a 5-point Likert scale, where 'Strongly Agree' was denoted by a score of 5 and 'Strongly Disagree' by a score of 1 (Schreiber et al., 2006).

The questionnaire has 45 components according to the conceptual framework: the demographic attributes (Region, Gender, Experience, Age range, Education, Employment, Number of Bank Accounts, and Expenses), and the construct indicators for Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value, Habit, Personal Innovativeness, Behavioural Intention, Use Behaviour, Basic Financial Management Knowledge, Financial Planning, Expenses and Income, Money and Assets, Interest Rates, Credit, Insurance, Investment, Deposits, Stocks, Bonds, Property, Orientation towards Personal Finance, Debt Philosophy, Financial Security, Evaluation, Skills to prepare financial plans, Technical financial planning skills, Savings skills, Financial planning behaviors, Techniques for budgets, Saving activities, Insurance activities, Pensions, Investments, Credit and bills, Monitoring, and Evaluation of financial management.

3.3. Structural Equation Modelling

The researchers used SmartPLS 4 to conduct confirmatory factor analysis (CFA) within structural equation modelling (SEM). Confirmatory factor analysis (CFA) improves reflectively assessed constructs using the domain sampling approach (Hair et al., 2020).

4. Results

4.1. Reliability and Convergent Validity

The validity indicators can be measured using the outer loading score; if the outer loading value is greater than 0.70 (>0.70), then the indicator is considered highly valid. The Average Variance Extracted (AVE) value that meets the minimum criteria is greater than 0.50 (>0.50). If in the testing there is an outer loading value below 0.70, the indicator can still be used on the condition that the minimum loading value is greater than 0.40 (loading > 0.40) and the AVE value is greater than 0.50 (AVE > 0.50), so the variable can be considered valid. If it is less than 0.40, it must be removed (Hair et al., n.d.).

Construct reliability is tested using composite reliability and Cronbach’s alpha. A construct variable is considered reliable if it has a composite reliability value above 0.70 and a Cronbach’s alpha above 0.70 (Hair et al., n.d.). Composite reliability is used to assess the amount of construct dependability as well as the instrument's accuracy, consistency, and precision in measuring the construct. The composite reliability and Cronbach's alpha values are more

than 0.70, indicating that the instrument is highly reliable. Ghozali & Latan (2014) state that a good Cronbach alpha value is above 0.70, a decent rho_c value is above 0.70, and an AVE value is above 0.50.

Table 3. Validity Indicators (Outer Loadings), Convergent Validity, Cronbach's Alpha and Composite Reliability

Latent Variable	Construct Variable	Loading (>0.70)	AVE (>0.50)	Cronbach's alpha	Composite reliability (rho_c)
Performance Expectancy	PE1	0.783	0.672	0.839	0.891
	PE2	0.826			
	PE3	0.846			
	PE4	0.823			
Effort Expectancy	EE1	0.872	0.704	0.793	0.877
	EE2	0.785			
	EE3	0.858			
Social Influence	SI1	0.824	0.710	0.797	0.880
	SI2	0.850			
	SI3	0.854			
Facilitating Conditions	FC1	0.856	0.739	0.824	0.895
	FC2	0.846			
	FC3	0.876			
Hedonic Motivations	HM1	0.866	0.730	0.815	0.890
	HM2	0.843			
	HM3	0.853			
Price Value	PV1	0.841	0.701	0.796	0.875
	PV2	0.784			
	PV3	0.884			
Habit	HT1	0.774	0.694	0.784	0.872
	HT2	0.865			
	HT3	0.857			
Personal Innovativeness	PI1	0.807	0.666	0.875	0.909
	PI2	0.827			
	PI3	0.808			
	PI4	0.829			
	PI5	0.810			
Behavioral intention	BI1	0.819	0.724	0.809	0.887
	BI2	0.859			
	BI3	0.873			
Use Behavior	UB1	0.830	0.703	0.789	0.876
	UB2	0.836			
	UB3	0.849			
Financial Knowledge	FK1	0.815	0.630	0.982	0.983
Financial Knowledge	FK2	0.797			
Financial Knowledge	FK3	0.792			
Financial Knowledge	FK4	0.810			
Financial Knowledge	FK5	0.797			
Financial Knowledge	FK6	0.781			
Financial Knowledge	FK7	0.753			

Financial Knowledge	FK8	0.805			
Financial Knowledge	FK9	0.776			
Financial Knowledge	FK10	0.795			
Financial Knowledge	FK11	0.791			
Financial Knowledge	FK12	0.737			
Financial Knowledge	FK13	0.809			
Financial Knowledge	FK14	0.799			
Financial Knowledge	FK15	0.795			
Financial Knowledge	FK16	0.788			
Financial Knowledge	FK17	0.798			
Financial Knowledge	FK18	0.774			
Financial Knowledge	FK19	0.814			
Financial Knowledge	FK20	0.797			
Financial Knowledge	FK21	0.812			
Financial Knowledge	FK22	0.797			
Financial Knowledge	FK23	0.804			
Financial Knowledge	FK24	0.800			
Financial Knowledge	FK25	0.799			
Financial Knowledge	FK26	0.794			
Financial Knowledge	FK27	0.758			
Financial Knowledge	FK28	0.808			
Financial Knowledge	FK29	0.815			
Financial Knowledge	FK30	0.802			
Financial Knowledge	FK31	0.801			
Financial Knowledge	FK32	0.766			
Financial Knowledge	FK33	0.813			
Financial Attitude	FA1	0.802	0.634	0.948	0.954
Financial Attitude	FA2	0.809			
Financial Attitude	FA3	0.778			
Financial Attitude	FA4	0.790			
Financial Attitude	FA5	0.794			
Financial Attitude	FA6	0.803			
Financial Attitude	FA7	0.823			
Financial Attitude	FA8	0.785			
Financial Attitude	FA9	0.796			
Financial Attitude	FA10	0.799			
Financial Attitude	FA11	0.804			
Financial Attitude	FA12	0.773			
Financial Skill	FS1	0.825	0.641	0.920	0.935
Financial Skill	FS2	0.810			
Financial Skill	FS3	0.821			
Financial Skill	FS4	0.794			
Financial Skill	FS5	0.793			
Financial Skill	FS6	0.753			
Financial Skill	FS7	0.806			
Financial Skill	FS8	0.803			
Financial Behavior	FB1	0.817	0.638	0.920	0.935
Financial Behavior	FB2	0.800			

Financial Behavior	FB3	0.803
Financial Behavior	FB4	0.804
Financial Behavior	FB5	0.790
Financial Behavior	FB6	0.803
Financial Behavior	FB7	0.804
Financial Behavior	FB8	0.781
Financial Behavior	FB9	0.788
Financial Behavior	FB10	0.806
Financial Behavior	FB11	0.809
Financial Behavior	FB12	0.782
Financial Behavior	FB13	0.784
Financial Behavior	FB14	0.781
Financial Behavior	FB15	0.805
Financial Behavior	FB16	0.806
Financial Behavior	FB17	0.793
Financial Behavior	FB18	0.798
Financial Behavior	FB19	0.814
Financial Behavior	FB20	0.806

4.2. Research Hypothesis Testing

The structural model coefficient analysis is used to evaluate hypotheses by finding which associations have a substantial influence. A significant association has a p-value < 0.05, whereas a non-significant relationship has a p-value > 0.05 (Hair et al., n.d.).

Based on Table 4, the path from Performance Expectancy to Behavioral Intention has an Original Sample (O) value of 0.140 and P Values of 0.001 (less than 0.05), which indicates a significant positive effect. Thus, H1 is accepted. Effort Expectancy to Behavioral Intention has O = 0.149, P = 0.000, so H2 is accepted. Interestingly, Responsiveness to E-Customer Satisfaction has O = 0.237, P = 0.000, confirming H3 (Responsiveness) is accepted in the structural model. Hedonic Motivations to Behavioral Intention reports O = 0.164, P = 0.000, showing a significant positive effect (H4 accepted). Price Value to Behavioral Intention reports O = 0.119, P = 0.003, showing a significant positive effect (H5 accepted).

Facilitating Conditions significantly affect both Behavioral Intention (O = 0.177, P = 0.000, H6 accepted) and Use Behavior (O = 0.165, P = 0.000, H7 accepted). Habit also significantly affects both Behavioral Intention (O = 0.143, P = 0.001, H8 accepted) and Use Behavior (O = 0.143, P = 0.000, H9 accepted). Behavioral Intention significantly affects Use Behavior (O = 0.121, P = 0.043, H10 accepted). Personal Innovativeness significantly affects both Behavioral Intention (O = 0.089, P = 0.035, H11 accepted) and Use Behavior (O = 0.198, P = 0.000, H12 accepted).

Regarding the Financial Literacy dimensions, Financial Behavior significantly positively influences Behavioral Intention (O = 0.273, P = 0.000, H13 accepted) and Use Behavior (O = 0.205, P = 0.000, H14 accepted). Financial Knowledge significantly positively influences Financial Behavior (O = 0.380, P = 0.000, H15 accepted). Financial Skill significantly positively influences Financial Behavior (O = 0.229, P = 0.000, H16 accepted). Finally, Financial Attitude significantly positively influences Financial Behavior (O = 0.296, P = 0.000, H17 accepted).

Table 4. Hypothesis test of the direct effects of the research model

Hypothesis	Path Direction	Original Sample (O)	T Statistics (|O/STDEV|)	P Values	Decision
H1	Performance Expectancy -> Behavioral Intention	0.140	3.433	0.001	Accepted

H2	Effort Expectancy -> Behavioral Intention	0.149	3.901	0.000	Accepted
H3	Responsiveness -> E-Customer Satisfaction	0.237	5.583	0.000	Accepted
H4	Hedonic Motivations -> Behavioral Intention	0.164	3.615	0.000	Accepted
H5	Price Value -> Behavioral Intention	0.119	2.966	0.003	Accepted
H6	Facilitating Conditions -> Behavioral Intention	0.177	4.763	0.000	Accepted
H7	Facilitating Conditions -> Use Behavior	0.165	3.813	0.000	Accepted
H8	Habit -> Behavioral Intention	0.143	3.482	0.001	Accepted
H9	Habit -> Use Behavior	0.143	3.694	0.000	Accepted
H10	Behavioral Intention -> Use Behavior	0.121	2.024	0.043	Accepted
H11	Personal Innovativeness -> Behavioral Intention	0.089	2.103	0.035	Accepted
H12	Personal Innovativeness -> Use Behavior	0.198	4.033	0.000	Accepted
H13	Financial Behavior -> Behavioral Intention	0.273	5.947	0.000	Accepted
H14	Financial Behavior -> Use Behavior	0.205	4.182	0.000	Accepted
H15	Financial Knowledge -> Financial Behavior	0.380	5.420	0.000	Accepted
H16	Financial Skill -> Financial Behavior	0.229	4.215	0.000	Accepted
H17	Financial Attitude -> Financial Behavior	0.296	4.298	0.000	Accepted

4.3. Coefficient of Determination (R^2)

The coefficient of determination is used to measure the accuracy of predictions (estimations). In general, an R^2 value of 0.75 is considered high, 0.50 moderate, and 0.25 low (Hair et al., n.d.).

Based on Table 5, the R^2 for Behavioral Intention is 0.372 (adjusted = 0.359), placing it in the moderate category. This indicates that the independent constructs (Effort Expectancy, Social Influence, Hedonic Motivation, Price Value, Facilitating Conditions, and Personal Innovativeness) explain 37.2% of the variation in Behavioral Intention, while the remaining 62.8% is influenced by other external factors.

The R^2 for Financial Behavior is 0.640 (adjusted = 0.638), which is highly explanatory. This demonstrates that Financial Knowledge, Financial Attitude, and Financial Skill together explain 64.0% of the variation in Financial Behavior, while 36.0% is explained by external elements.

Finally, the R^2 for Use Behavior is 0.234 (adjusted = 0.225), which falls in the low category. This indicates that Behavioral Intention, Facilitating Conditions, Habit, and Personal Innovativeness together explain 23.4% of Use Behavior, leaving 76.6% explained by unexamined variables.

Table 5. Coefficient of Determination (R^2) of the structural model

Latent Variable Endogenous	R-square	R-square Adjusted	Predictive Accuracy Category
Behavioral Intention	0.372	0.359	Moderate
Financial Behavior	0.640	0.638	High
Use Behavior	0.234	0.225	Low

4.4. Discriminant Validity

Discriminant validity was assessed using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio to evaluate the distinctiveness of each construct variable in the model (Hair et al., 2021).

According to the Fornell-Larcker criterion, discriminant validity is confirmed when the square root of the AVE for each reflective construct is greater than its correlation with any other construct in the model (Hair et al., 2017). As shown in Table 6, all diagonal values (representing the square root of the AVE) exceed the off-diagonal correlation

values in their respective columns and rows. This confirms that the measurement model exhibits satisfactory discriminant validity and construct reliability.

Furthermore, the Heterotrait-Monotrait (HTMT) ratio was computed as a modern statistical standard for discriminant validity. An HTMT ratio below 0.90 suggests that conceptually similar constructs are distinct, while a value below 0.85 is recommended for distinct conceptual constructs (Hair et al., n.d.). As shown in Table 7, all HTMT ratio values in this model fall well below the 0.90 threshold, indicating that each construct represents a separate latent variable suitable for path modeling.

Table 6. Discriminant Validity: Fornell-Larcker Criterion

	BI	CP	CS	CT	EE	EF	ELOY	FA	FB	FC	FF	FK	FS	HM	HT	PE	PI	PRV	PV	RP	SA	SI	UB
BI	**0.894**																						
CP	-0.036	**0.882**																					
CS	0.009	0.727	**0.839**																				
CT	-0.014	0.595	0.727	**0.907**																			
EE	-0.079	0.055	0.036	0.045	**0.860**																		
EF	-0.060	0.035	0.040	0.100	0.497	**0.827**																	
ELOY	-0.024	0.416	0.552	0.418	0.032	0.042	**0.903**																
FA	0.206	-0.030	-0.013	0.021	-0.030	0.105	0.040	**0.800**															
FB	0.219	-0.002	0.043	0.037	0.016	0.240	0.039	0.349	**0.847**														
FC	-0.046	0.033	0.027	0.018	0.666	0.359	0.067	-0.027	0.019	**0.867**													
FF	0.040	0.105	0.170	0.168	0.029	-0.045	0.113	-0.006	-0.038	0.013	**0.840**												
FK	0.533	-0.034	0.024	-0.013	-0.034	-0.006	-0.009	0.415	0.367	-0.046	0.045	**0.774**											
FS	0.312	-0.010	0.061	0.034	0.016	0.151	0.056	0.529	0.554	0.021	-0.037	0.474	**0.796**										
HM	-0.072	0.038	0.023	0.041	0.785	0.450	0.032	-0.027	-0.003	0.686	0.014	-0.056	0.041	**0.928**									
HT	-0.078	0.033	0.012	0.059	0.751	0.495	0.012	-0.031	-0.013	0.594	-0.011	-0.069	0.015	0.791	**0.885**								
PE	-0.088	-0.009	-0.016	-0.012	0.724	0.567	-0.027	-0.048	0.015	0.527	0.034	-0.049	0.041	0.637	0.597	**0.850**							
PI	0.690	-0.058	0.028	-0.011	-0.060	-0.048	-0.012	0.258	0.202	-0.030	0.084	0.455	0.254	-0.087	-0.060	-0.065	**0.885**						
PRV	-0.006	0.557	0.624	0.537	-0.012	-0.015	0.327	-0.005	0.038	0.020	0.329	0.011	0.052	0.000	-0.032	-0.036	0.022	**0.879**					
PV	-0.089	0.008	-0.014	0.012	0.559	0.351	-0.015	-0.074	-0.033	0.446	-0.005	-0.052	-0.001	0.620	0.642	0.465	-0.094	-0.050	**0.944**				
RP	-0.010	0.692	0.722	0.657	-0.003	-0.002	0.415	-0.023	0.003	0.011	0.290	-0.002	0.026	-0.007	-0.022	-0.035	0.014	0.768	-0.017	**0.840**			
SA	0.052	0.164	0.253	0.226	-0.020	-0.022	0.198	-0.013	-0.058	-0.004	0.705	0.035	0.004	-0.015	-0.041	-0.005	0.072	0.487	-0.040	0.442	**0.839**		
SI	-0.048	0.015	0.007	-0.010	0.670	0.363	0.003	0.026	0.043	0.524	0.023	0.027	0.037	0.597	0.576	0.496	0.005	-0.018	0.488	-0.029	0.001	**0.885**	
UB	0.731	-0.040	0.009	-0.022	-0.052	-0.056	-0.026	0.252	0.290	-0.034	0.010	0.625	0.334	-0.065	-0.078	-0.093	0.611	-0.006	-0.081	-0.020	0.001	-0.015	**0.890**

Table 7. Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

Path relationship of latent variables	Heterotrait-monotrait ratio (HTMT)	Decision
Efficiency <-> Behavioral intention	0.130	Fit
Efficiency <-> Compensation	0.047	Fit
Efficiency <-> Contact	0.068	Fit
Efficiency <-> E-Customer Loyalty	0.099	Fit
Efficiency <-> E-Customer Satisfaction	0.177	Fit
Effort Expectancy <-> Behavioral intention	0.186	Fit
Effort Expectancy <-> Compensation	0.077	Fit
Effort Expectancy <-> Contact	0.045	Fit
Effort Expectancy <-> E-Customer Loyalty	0.117	Fit
Effort Expectancy <-> E-Customer Satisfaction	0.061	Fit
Effort Expectancy <-> Efficiency	0.038	Fit
Facilitating Conditions <-> Behavioral intention	0.273	Fit
Facilitating Conditions <-> Compensation	0.070	Fit
Facilitating Conditions <-> Contact	0.048	Fit
Facilitating Conditions <-> E-Customer Loyalty	0.073	Fit
Facilitating Conditions <-> E-Customer Satisfaction	0.157	Fit

Facilitating Conditions <-> Efficiency	0.137	Fit
Facilitating Conditions <-> Effort Expectancy	0.079	Fit
Financial Attitude <-> Behavioral intention	0.355	Fit
Financial Attitude <-> Compensation	0.037	Fit
Financial Attitude <-> Contact	0.046	Fit
Financial Attitude <-> E-Customer Loyalty	0.042	Fit
Financial Attitude <-> E-Customer Satisfaction	0.064	Fit
Financial Attitude <-> Efficiency	0.075	Fit
Financial Attitude <-> Effort Expectancy	0.144	Fit
Financial Attitude <-> Facilitating Conditions	0.075	Fit
Financial Behavior <-> Behavioral intention	0.460	Fit
Financial Behavior <-> Compensation	0.042	Fit
Financial Behavior <-> Contact	0.045	Fit
Financial Behavior <-> E-Customer Loyalty	0.046	Fit
Financial Behavior <-> E-Customer Satisfaction	0.080	Fit
Financial Behavior <-> Efficiency	0.076	Fit
Financial Behavior <-> Effort Expectancy	0.149	Fit
Financial Behavior <-> Facilitating Conditions	0.066	Fit
Financial Behavior <-> Financial Attitude	0.732	Fit
Financial Knowledge <-> Behavioral intention	0.420	Fit
Financial Knowledge <-> Compensation	0.044	Fit
Financial Knowledge <-> Contact	0.052	Fit
Financial Knowledge <-> E-Customer Loyalty	0.070	Fit
Financial Knowledge <-> E-Customer Satisfaction	0.083	Fit
Financial Knowledge <-> Efficiency	0.067	Fit
Financial Knowledge <-> Effort Expectancy	0.178	Fit
Financial Knowledge <-> Facilitating Conditions	0.093	Fit
Financial Knowledge <-> Financial Attitude	0.751	Fit
Financial Knowledge <-> Financial Behavior	0.764	Fit
Financial Skill <-> Behavioral intention	0.417	Fit
Financial Skill <-> Compensation	0.047	Fit
Financial Skill <-> Contact	0.042	Fit
Financial Skill <-> E-Customer Loyalty	0.139	Fit
Financial Skill <-> E-Customer Satisfaction	0.092	Fit
Financial Skill <-> Efficiency	0.102	Fit
Financial Skill <-> Effort Expectancy	0.151	Fit
Financial Skill <-> Facilitating Conditions	0.070	Fit
Financial Skill <-> Financial Attitude	0.612	Fit
Financial Skill <-> Financial Behavior	0.688	Fit
Financial Skill <-> Financial Knowledge	0.697	Fit
Fulfillment <-> Behavioral intention	0.118	Fit
Fulfillment <-> Compensation	0.099	Fit
Fulfillment <-> Contact	0.051	Fit
Fulfillment <-> E-Customer Loyalty	0.106	Fit
Fulfillment <-> E-Customer Satisfaction	0.188	Fit
Fulfillment <-> Efficiency	0.079	Fit

Fulfillment <-> Effort Expectancy	0.070	Fit
Fulfillment <-> Facilitating Conditions	0.127	Fit
Fulfillment <-> Financial Attitude	0.054	Fit
Fulfillment <-> Financial Behavior	0.049	Fit
Fulfillment <-> Financial Knowledge	0.044	Fit
Fulfillment <-> Financial Skill	0.049	Fit
Habit <-> Behavioral intention	0.293	Fit
Habit <-> Compensation	0.210	Fit
Habit <-> Contact	0.107	Fit
Habit <-> E-Customer Loyalty	0.133	Fit
Habit <-> E-Customer Satisfaction	0.153	Fit
Habit <-> Efficiency	0.075	Fit
Habit <-> Effort Expectancy	0.076	Fit
Habit <-> Facilitating Conditions	0.041	Fit
Habit <-> Financial Attitude	0.082	Fit
Habit <-> Financial Behavior	0.128	Fit
Habit <-> Financial Knowledge	0.148	Fit
Habit <-> Financial Skill	0.096	Fit
Habit <-> Fulfillment	0.127	Fit
Hedonic Motivations <-> Behavioral intention	0.302	Fit
Hedonic Motivations <-> Compensation	0.072	Fit
Hedonic Motivations <-> Contact	0.055	Fit
Hedonic Motivations <-> E-Customer Loyalty	0.025	Fit
Hedonic Motivations <-> E-Customer Satisfaction	0.159	Fit
Hedonic Motivations <-> Efficiency	0.069	Fit
Hedonic Motivations <-> Effort Expectancy	0.030	Fit
Hedonic Motivations <-> Facilitating Conditions	0.071	Fit
Hedonic Motivations <-> Financial Attitude	0.090	Fit
Hedonic Motivations <-> Financial Behavior	0.183	Fit
Hedonic Motivations <-> Financial Knowledge	0.146	Fit
Hedonic Motivations <-> Financial Skill	0.085	Fit
Hedonic Motivations <-> Fulfillment	0.157	Fit
Hedonic Motivations <-> Habit	0.112	Fit
Performance Expectancy <-> Behavioral intention	0.250	Fit
Performance Expectancy <-> Compensation	0.054	Fit
Performance Expectancy <-> Contact	0.082	Fit
Performance Expectancy <-> E-Customer Loyalty	0.049	Fit
Performance Expectancy <-> E-Customer Satisfaction	0.080	Fit
Performance Expectancy <-> Efficiency	0.067	Fit
Performance Expectancy <-> Effort Expectancy	0.066	Fit
Performance Expectancy <-> Facilitating Conditions	0.050	Fit
Performance Expectancy <-> Financial Attitude	0.154	Fit
Performance Expectancy <-> Financial Behavior	0.190	Fit
Performance Expectancy <-> Financial Knowledge	0.210	Fit
Performance Expectancy <-> Financial Skill	0.187	Fit
Performance Expectancy <-> Fulfillment	0.038	Fit

Performance Expectancy <-> Habit	0.088	Fit
Performance Expectancy <-> Hedonic Motivations	0.040	Fit
Personal Innovativeness <-> Behavioral intention	0.221	Fit
Personal Innovativeness <-> Compensation	0.082	Fit
Personal Innovativeness <-> Contact	0.093	Fit
Personal Innovativeness <-> E-Customer Loyalty	0.056	Fit
Personal Innovativeness <-> E-Customer Satisfaction	0.137	Fit
Personal Innovativeness <-> Efficiency	0.126	Fit
Personal Innovativeness <-> Effort Expectancy	0.081	Fit
Personal Innovativeness <-> Facilitating Conditions	0.083	Fit
Personal Innovativeness <-> Financial Attitude	0.100	Fit
Personal Innovativeness <-> Financial Behavior	0.087	Fit
Personal Innovativeness <-> Financial Knowledge	0.119	Fit
Personal Innovativeness <-> Financial Skill	0.117	Fit
Personal Innovativeness <-> Fulfillment	0.035	Fit
Personal Innovativeness <-> Habit	0.131	Fit
Personal Innovativeness <-> Hedonic Motivations	0.087	Fit
Personal Innovativeness <-> Performance Expectancy	0.095	Fit
Price Value <-> Behavioral intention	0.220	Fit
Price Value <-> Compensation	0.057	Fit
Price Value <-> Contact	0.060	Fit
Price Value <-> E-Customer Loyalty	0.063	Fit
Price Value <-> E-Customer Satisfaction	0.131	Fit
Price Value <-> Efficiency	0.170	Fit
Price Value <-> Effort Expectancy	0.043	Fit
Price Value <-> Facilitating Conditions	0.033	Fit
Price Value <-> Financial Attitude	0.093	Fit
Price Value <-> Financial Behavior	0.139	Fit
Price Value <-> Financial Knowledge	0.157	Fit
Price Value <-> Financial Skill	0.135	Fit
Price Value <-> Fulfillment	0.079	Fit
Price Value <-> Habit	0.054	Fit
Price Value <-> Hedonic Motivations	0.057	Fit
Price Value <-> Performance Expectancy	0.065	Fit
Price Value <-> Personal Innovativeness	0.066	Fit
Privacy <-> Behavioral intention	0.145	Fit
Privacy <-> Compensation	0.054	Fit
Privacy <-> Contact	0.041	Fit
Privacy <-> E-Customer Loyalty	0.059	Fit
Privacy <-> E-Customer Satisfaction	0.207	Fit
Privacy <-> Efficiency	0.081	Fit
Privacy <-> Effort Expectancy	0.040	Fit
Privacy <-> Facilitating Conditions	0.064	Fit
Privacy <-> Financial Attitude	0.092	Fit
Privacy <-> Financial Behavior	0.101	Fit
Privacy <-> Financial Knowledge	0.049	Fit

Privacy <-> Financial Skill	0.070	Fit
Privacy <-> Fulfillment	0.065	Fit
Privacy <-> Habit	0.046	Fit
Privacy <-> Hedonic Motivations	0.060	Fit
Privacy <-> Performance Expectancy	0.062	Fit
Privacy <-> Personal Innovativeness	0.045	Fit
Privacy <-> Price Value	0.059	Fit
Reliability <-> Behavioral intention	0.182	Fit
Reliability <-> Compensation	0.093	Fit
Reliability <-> Contact	0.037	Fit
Reliability <-> E-Customer Loyalty	0.086	Fit
Reliability <-> E-Customer Satisfaction	0.223	Fit
Reliability <-> Efficiency	0.045	Fit
Reliability <-> Effort Expectancy	0.043	Fit
Reliability <-> Facilitating Conditions	0.040	Fit
Reliability <-> Financial Attitude	0.070	Fit
Reliability <-> Financial Behavior	0.057	Fit
Reliability <-> Financial Knowledge	0.045	Fit
Reliability <-> Financial Skill	0.101	Fit
Reliability <-> Fulfillment	0.047	Fit
Reliability <-> Habit	0.071	Fit
Reliability <-> Hedonic Motivations	0.038	Fit
Reliability <-> Performance Expectancy	0.039	Fit
Reliability <-> Personal Innovativeness	0.030	Fit
Reliability <-> Price Value	0.054	Fit
Reliability <-> Privacy	0.056	Fit
Responsiveness <-> Behavioral intention	0.241	Fit
Responsiveness <-> Compensation	0.075	Fit
Responsiveness <-> Contact	0.041	Fit
Responsiveness <-> E-Customer Loyalty	0.085	Fit
Responsiveness <-> E-Customer Satisfaction	0.264	Fit
Responsiveness <-> Efficiency	0.080	Fit
Responsiveness <-> Effort Expectancy	0.057	Fit
Responsiveness <-> Facilitating Conditions	0.205	Fit
Responsiveness <-> Financial Attitude	0.046	Fit
Responsiveness <-> Financial Behavior	0.048	Fit
Responsiveness <-> Financial Knowledge	0.049	Fit
Responsiveness <-> Financial Skill	0.058	Fit
Responsiveness <-> Fulfillment	0.073	Fit
Responsiveness <-> Habit	0.060	Fit
Responsiveness <-> Hedonic Motivations	0.143	Fit
Responsiveness <-> Performance Expectancy	0.089	Fit
Responsiveness <-> Personal Innovativeness	0.114	Fit
Responsiveness <-> Price Value	0.065	Fit
Responsiveness <-> Privacy	0.070	Fit
Responsiveness <-> Reliability	0.074	Fit

Social Influence <-> Behavioral intention	0.188	Fit
Social Influence <-> Compensation	0.053	Fit
Social Influence <-> Contact	0.060	Fit
Social Influence <-> E-Customer Loyalty	0.093	Fit
Social Influence <-> E-Customer Satisfaction	0.051	Fit
Social Influence <-> Efficiency	0.048	Fit
Social Influence <-> Effort Expectancy	0.072	Fit
Social Influence <-> Facilitating Conditions	0.049	Fit
Social Influence <-> Financial Attitude	0.043	Fit
Social Influence <-> Financial Behavior	0.067	Fit
Social Influence <-> Financial Knowledge	0.047	Fit
Social Influence <-> Financial Skill	0.064	Fit
Social Influence <-> Fulfillment	0.046	Fit
Social Influence <-> Habit	0.113	Fit
Social Influence <-> Hedonic Motivations	0.153	Fit
Social Influence <-> Performance Expectancy	0.064	Fit
Social Influence <-> Personal Innovativeness	0.123	Fit
Social Influence <-> Price Value	0.051	Fit
Social Influence <-> Privacy	0.060	Fit
Social Influence <-> Reliability	0.083	Fit
Social Influence <-> Responsiveness	0.056	Fit
Use Behavior <-> Behavioral intention	0.396	Fit
Use Behavior <-> Compensation	0.143	Fit
Use Behavior <-> Contact	0.087	Fit
Use Behavior <-> E-Customer Loyalty	0.176	Fit
Use Behavior <-> E-Customer Satisfaction	0.283	Fit
Use Behavior <-> Efficiency	0.248	Fit
Use Behavior <-> Effort Expectancy	0.194	Fit
Use Behavior <-> Facilitating Conditions	0.275	Fit
Use Behavior <-> Financial Attitude	0.340	Fit
Use Behavior <-> Financial Behavior	0.334	Fit
Use Behavior <-> Financial Knowledge	0.382	Fit
Use Behavior <-> Financial Skill	0.370	Fit
Use Behavior <-> Fulfillment	0.166	Fit
Use Behavior <-> Habit	0.278	Fit
Use Behavior <-> Hedonic Motivations	0.214	Fit
Use Behavior <-> Performance Expectancy	0.235	Fit
Use Behavior <-> Personal Innovativeness	0.320	Fit
Use Behavior <-> Price Value	0.312	Fit
Use Behavior <-> Privacy	0.100	Fit
Use Behavior <-> Reliability	0.201	Fit
Use Behavior <-> Responsiveness	0.121	Fit
Use Behavior <-> Social Influence	0.152	Fit

Table 8. Goodness of Fit (GoF) Index test calculation

Average AVE	Average R-square	GoF value	Note

0.684	0.302	0.455	High (Goodness of Fit)

Table 9. Model Fit Indices of Saturated vs. Estimated Model

Fit Index Measure	Saturated Model	Estimated Model	Threshold	References
SRMR	0.054	0.061	< 0.080	Hu & Bentler, 1999; Cho et al., 2020
d_ULS	29.461	38.396	N/A	Schuberth et al., 2023
d_G	12.821	12.931	N/A	Schuberth et al., 2023
Chi-square	70,529.611	70,985.527	N/A	Henseler et al., 2014
NFI	0.641	0.639	Between 0 and 1	Schuberth et al., 2023

5. Discussion

This study presents an analysis of the financial behaviour, behavior intention, use behavior, satisfaction, and loyalty of millennial customers toward digital banking in Indonesia. Financial behaviour, facilitating conditions, habits, personal innovativeness, customer satisfaction and loyalty have a significant positive effect on the use behaviour of digital banking.

There are ten direct relationships toward behaviour intention: financial behaviour, performance expectations, effort expectations, social influence, facilitating conditions, habits, price values, hedonic motivation, personal innovativeness, and customer satisfaction. The observed direct relationships emphasize the important role of behavioral factors on digital banking adoption.

Financial behavior includes all of the different ways people handle their money, such as investing, saving, and spending, and it significantly influences how they use financial services and products including digital banking. The research indicates that financial behavior (beta = 0.273; p = 0.000), a key aspect of financial literacy, significantly influences the behavior intention to use digital banking. Financial behavior (beta = 0.205; p = 0.000) also has a considerable beneficial impact on the actual use behavior of digital banking. This result is consistent with prior research showing that financial literacy increases users' intention to utilize digital payments and digital payment use behavior (Usman et al., 2025). An active use of financial technology products can lead to increased savings, especially when combined with strong financial literacy (Basar et al., 2025). This relationship is highlighted by the concept that smart financial behavior creates favorable financial results, which are crucial for the optimal use of existing financial resources.

Financial knowledge (beta = 0.380; p = 0.000), representing the highest beta of financial literacy, significantly influences financial behavior. People with higher financial knowledge demonstrate better financial management techniques and decision-making abilities. The study of Kumar et al. (2024) indicates that financial knowledge has a major impact on financial behavior in India's National Capital Region (NCR). The financial behavior of young, low-income persons in Malaysia is also positively influenced by financial knowledge (Sabri et al., 2022). How people approach financial decisions and investments is also greatly influenced by their financial attitude, defined by their belief and feelings around money. Financial Attitude (beta = 0.296; p = 0.000) significantly influences financial behavior. This is supported by Sam et al. (2022) in Ghana, showing that financial attitude has a significant positive relationship with financial behavior intention. Positive financial attitudes lead to better spending management, loan prudence, and savings commitment (Widjayanti et al., 2025). Financial skills (beta = 0.229; p = 0.000) significantly influence financial behavior. The findings of Bai (2023) show that people with better levels of financial literacy, excellent mental budgeting skills, and self-control exhibit favorable investment decision behavior.

Performance expectation refers to the degree to which a user feels that using a certain system improves their work performance, which is a strong predictor of behavioral intention to embrace digital banking services (beta = 0.140; p = 0.001). According to research, customers who expect excellent performance from digital banking systems are more inclined to engage with these platforms (Schrank, 2025). Effort expectation (beta = 0.149; p = 0.000) relates to the perceived ease of use of technology, having a major impact on users' intentions. When consumers perceive that

a banking application is easy to use, their intentions to adopt and utilize the service increase (Appiah & Agblewornu, 2025). The significance of social influence is evident in its positive effects on behavioral intentions (beta = 0.151; p = 0.000). Research mentions that individuals are frequently attracted to interact with digital banking services after seeing others in their community effectively use these technologies (Addula, 2025).

Hedonic motivation, or the desire for pleasure, has a substantial impact on behavioral intentions (beta = 0.164; p = 0.000). Price value has a major impact on behavioral intention (beta = 0.119; p = 0.003). Users appear to be more motivated if features are worth the expense. Facilitating conditions have a crucial role in determining behavioral intention (beta = 0.177; p = 0.000) and actual use behavior (beta = 0.165; p = 0.000) (Saprikis et al., 2022; Apau et al., 2025). Habits, which are described as automatic behaviors, play an important role in influencing behavioral intentions (beta = 0.143; p = 0.001) and use behavior (beta = 0.143; p = 0.000). Over time, habit became a more accurate predictor of use (Venkatesh et al., 2023b). Personal innovativeness significantly impacts behavioral intentions (beta = 0.089; p = 0.035) and use behavior (beta = 0.198; p = 0.000) (Setiawan et al., 2021b; Truc, 2024b).

5.1. Theoretical Contributions

This study theoretically contributes by expanding the UTAUT-3 framework to include financial literacy and e-service quality, offering an expanded review of the variables determining user adoption as well as customer satisfaction and loyalty with digital banking among Indonesian millennials. The extended model of UTAUT-3's key novelty is the addition of financial literacy, demonstrating users' ability to understand and effectively use financial instruments. Financial literacy not only increases customer confidence but additionally has a substantial impact on their overall behavior intention and actual usage of these platforms.

5.2. Practical Implications

Understanding how these factors interact can help banks improve customer adoption and satisfaction. For increased rates of adoption, banks should concentrate on promoting satisfactory impressions of performance expectancy and effort expectancy using user-centric design concepts. To lower anxiety, delivering users instructions about how to use the mobile banking app properly and securely is crucial. Leveraging social influence through strategic collaborations can catalyze word-of-mouth recommendations. Finally, to improve users' financial knowledge, digital banking platforms can feature hands-on tutorials, personalized budget calculators, and savings monitors.

6. Conclusions, Limitations and Future Research

The enhanced UTAUT-3 model integrated with financial literacy provides a complete framework for evaluating consumer behavior in digital banking. This study contributes by examining how perceived service quality, customer satisfaction, and financial literacy influence adoption. Structural model results demonstrated high explanatory power, with R^2 of 0.640 for financial behavior and GoF of 0.455, indicating excellent alignment and predictive ability.

Despite its robustness, limitations exist, such as relying on self-reported user measurements and focusing on the millennial population of Indonesia. Future research could investigate longitudinal trends, explore user demographics across other generations, and implement comparative studies across multiple countries to broaden the model's generalizability.

CRediT Authorship Contribution Statement

Jimmy Carter Sudianjaya: Writing – original draft, Software, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization, Visualization, Validation, Supervision, Project administration.

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Declaration of Competing Interest

The author declares that there are no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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