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A UTAUT-BASED STUDY ON THE ADOPTION OF ISLAMIC (PARTICIPATION) BANKING MOBILE APPLICATIONS IN TÜRKİYE

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Abstract: This study examines the adoption of Islamic banking (Participation banking) mobile applications in Türkiye within the framework of the Unified Theory of Acceptance and Use of Technology (UTAUT). Data collected from 199 participants were analyzed using Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The findings of the study show that behavioral intention (BI) strongly and significantly affects use behavior (UB). In addition, the main determinants of BI were found to be effort expectancy (EE) and social influence (SI). In contrast, performance expectancy (PE) does not have a significant effect on BI. Moreover, the direct effect of facilitating conditions (FC) on UB was not statistically supported. The results indicate that the perception of benefit in the adoption of Islamic banking mobile applications in Türkiye may have reached saturation, and that users' intentions are shaped more by ease of use and social norms. Considering that studies addressing the adoption of Islamic banking mobile applications in the Turkish context within the UTAUT framework are limited, this study provides a noteworthy contribution in terms of filling the aforementioned gap in the literature.

Keywords: Islamic Banking, Participation Banking, Mobile Banking, Mobile Banking Adoption, UTAUT.

JEL Code: G21, G20, O33.

TÜRKİYE'DE İSLAMİ (KATILIM) BANKACILIK MOBİL UYGULAMALARININ BENİMSENMESİ ÜZERİNE UTAUT TABANLI BİR ARAŞTIRMA

Özet: Bu çalışma, Türkiye'de İslami bankacılık (Katılım bankacılığı) mobil uygulamalarının benimsenmesini Birleşik Teknoloji Kabul ve Kullanım Teorisi (UTAUT) çerçevesinde incelemektedir. 199 katılımcıdan toplanan veriler, SmartPLS 4 ile Yapısal Eşitlik Modellemesi (PLS-SEM) kullanılarak analiz edilmiştir. Çalışmanın bulguları, davranışsal niyetin (BI) kullanım davranışını (UB) güçlü ve anlamlı biçimde etkilediğini göstermektedir. Ayrıca BI'nın temel belirleyicileri çaba beklentisi (EE) ve sosyal etki (SI) olarak bulunmuştur. Buna karşın performans beklentisi (PE) BI üzerinde anlamlı bir etkiye sahip değildir. Ayrıca kolaylaştırıcı koşulların (FC) UB üzerindeki doğrudan etkisi de istatistiksel olarak desteklenmemiştir. Sonuçlar, Türkiye'de İslami bankacılık mobil uygulamalarının benimsenmesinde fayda algısının doygunluğa ulaşmış olabileceğini, kullanıcıların niyetlerinin daha çok kullanım kolaylığı ve sosyal normlar tarafından şekillendiğini göstermektedir. Türkiye bağlamında İslami bankacılık mobil uygulamalarının benimsenmesini UTAUT çerçevesinde ele alan çalışmaların sınırlı olduğu dikkate alındığında, bu çalışma söz konusu literatür boşluğunu doldurma bakımından kayda değer bir katkı sunmaktadır.

Anahtar Kelimeler: İslami Bankacılık, Katılım Bankacılığı, Mobil Bankacılık, Mobil Bankacılık Adaptasyonu, UTAUT.

JEL Kodu: G21, G20, O33.

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Introduction

Built on the legacy of telecommunication channels, mobile banking has become one of the most important tools for accessing financial services today (Dandena et al., 2020). The increase in smartphone ownership, the rise in mobile internet speeds, and the maturation of app ecosystems have accelerated the evolution of banking transactions from physical branches and desktop channels to mobile applications (Güler, 2017; Brown, 2003). Today, transactions such as information inquiry, account management, bill payment, and money transfer can be carried out quickly and easily through mobile banking applications, and the reduction in transaction costs and waiting times significantly improves the customer experience (Laukkanen, 2007; Markoska et al., 2017).

The increasing expectations of customers for benefits and ease of use from their banks today raise banks' appetite for investing in digital channels (Gu et al., 2009). In Türkiye, as of 2024, the internet usage rate reaching 88.8% (TÜİK, 2024), the mobile phone user rate reaching 93.8% (We Are Social & Meltwater, February 2024), and factors such as the tech-savviness of the young population accelerate these investments (Yüksel & Artar, 2022). In this context, for banks to gain competitive advantage, develop service design in a user-centric manner, and increase customer satisfaction, it has become a critical necessity to understand the factors by which mobile banking is adopted (Korkmaz et al., 2023; Karataş & Bozkurt, 2019). In addition, for banks, topics such as accessibility and inclusiveness, branch access, participation of individuals with physical disabilities in financial services (Goyal, 2017; Ingale, 2024; Borowska-Beszta et al., 2023), operational efficiency and cost advantage (Orina, 2020) have become fundamental determinants of competition with mobile banking services. Therefore, today mobile banking should be considered not merely as a technological choice but as a strategic transformation area for banking services. In this regard, the importance of studies examining technology acceptance is becoming increasingly evident.

The Unified Theory of Acceptance and Use of Technology (UTAUT), widely used in technology acceptance, reveals how performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) explain behavioral intention (BI) and use behavior (UB) (Venkatesh et al., 2003; Venkatesh et al., 2008; Zhou, 2008). Over time, additional variables such as price value, habit, and hedonic motivation were included in the model (UTAUT2) to explain technology acceptance more comprehensively. The UTAUT/UTAUT2 models, which generally focus on the conventional banking literature, suggest that variables of ease of use, perceived benefit, social environment, and infrastructure are determinant factors in technology acceptance (Zhou et al., 2010; Bhatiasevi, 2016; Sarfaraz, 2017; Samartha et al., 2022; Ivanova & Kim, 2022; Rofi'i et al., 2023).

Studies conducted with UTAUT/UTAUT2 in the context of Islamic banking (participation banking) are fewer compared to conventional banking. Existing findings reveal that elements such as Sharia compliance, religious sensitivity, trust, and perceived risk shape behavioral intention together with the core dimensions of UTAUT (Johar & Suhartanto, 2019; Raza et al., 2019; Sudarsono et al., 2022). Raza et al. (2019) showed that variables other than social influence positively affect intention, while Khan et al. (2019) demonstrated that trust strengthens the relationship between intention and use. Within the UTAUT2 framework, the variables of price value and habit, combined with the value alignment and ethical sensitivities of Islamic banking customers, render acceptance dynamics multidimensional (Mohd Thas Thaker et al., 2022; Yaseen et al., 2022).

Although mobile banking is rapidly becoming widespread in Türkiye, only one study has been found that examines the adoption of Islamic banking mobile applications within the UTAUT framework (Khan et al., 2022). Considering the young and tech-savvy population, high

mobile penetration, and a regulatory environment supporting digital finance (Şahin & Cantürk, 2020), examining the mobile application acceptance dynamics of Islamic banking customers in Türkiye is important for both academia and the Islamic banking sector. In this context, evaluating the relationships between mobile banking service quality, bank reputation, and customer satisfaction (Korkmaz et al., 2023; Karataş & Bozkurt, 2019) together with acceptance models is of great importance.

Accordingly, the study aims to fill the gap in the literature by examining the adoption of Islamic banking mobile applications in Türkiye based on UTAUT. In the research, the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions on behavioral intention and use will be tested specifically for Islamic banking. Thus, the impact of FinTech's accessibility and usability (Alkhazaleh & Haddad, 2021; Lestari & Rahmanto, 2023) on Islamic banking customers' intention and level of use will be evaluated within a holistic model. The findings to be obtained are expected to contribute to banks' mobile experience design, open banking, customer education and support services, as well as policies and regulations for the digitalization of Islamic finance in Türkiye.

Accordingly, the study is structured as follows: In the first section, the UTAUT model is discussed in detail and the literature on mobile banking adoption in the context of Islamic (participation) banking is comprehensively reviewed. In the second section, the research methodology is presented, the sample and data collection process are explained, and the variables used in the scale as well as the item adaptation process are described. In the fourth section, the findings related to the measurement and structural model are presented, and the reliability and validity analyses, model fit criteria, and hypothesis test results are discussed. In the fifth and final section, the findings obtained are compared with the literature, and recommendations are offered for the Islamic banking sector and policy makers.

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Theoretical Background and Hypothesis Development

UTAUT Model

The Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the most comprehensive and advanced models, including user psychology, used to test technology adoption and acceptance (Momani, 2020; Tian & Wang, 2022). The UTAUT model was created by Venkatesh and colleagues (2003) by combining eight different models[1] (Zhou, 2008). The UTAUT model has become a highly comprehensive model by taking the best aspects of previous technology acceptance models (Oye et al., 2014). In this context, it is considered a model with the power to explain in detail the variables that affect behavior and intention (Lee et al., 2025).

[1] TAM (Technology Acceptance Model), TPB (Theory of Planned Behavior), TRA (Theory of Reasoned Action), Motivation Model, C-TAM-TPB, SCT (Social Cognitive Theory), IDT (Innovation Diffusion Theory), MPCU (Model of PC Utilization).

The UTAUT model consists of four different core components: performance expectancy, effort expectancy, social influence, and facilitating conditions (Saghafian et al., 2021). Performance expectancy (PE) is the perceived performance improvement when users adopt a new technology (Zhou, 2008), effort expectancy (EE) is the degree of ease related to the use of the system, social influence (SI) refers to an individual's perception that people important to them (family and friends) think the new technology should be used (Chang et al., 2019). Facilitating conditions (FC) reflect an individual's belief that there is an organizational and technical infrastructure that will support the use of the system (Anthony Jr. et al., 2023 Dwivedi et al., 2019).

The UTAUT model has been criticized for reasons such as not adequately reflecting the complexity of technology adoption, focusing too much on individuals' beliefs and perceptions, and how much it can contribute to the rapidly developing and expanding field of technology adoption (Shachak et al., 2019). Despite this, the UTAUT model demonstrates its importance by explaining a significant portion of the variance in behavioral intention toward technology use (usually 70%) (Venkatesh et al., 2003). It also still retains the feature of being one of the most used methods since the period it was developed (Ekaimi et al., 2024).

Performance Expectancy (PE)

Performance expectancy (PE), which expresses individuals' belief in the perceived gains in their job performance by using the technology or product, in the context of financial products, is that users can perform their financial transactions more efficiently, quickly, and easily (Venkatesh et al., 2003; Chang, 2012; Xu et al., 2022). In the UTAUT model, performance expectancy has been accepted as the strongest tool to explain the intention to use systems (Luo, 2010). "In the context of mobile banking, PE encompasses the user's perception of how effectively the technology will enable them to manage their financial situations, make transactions, and access banking services more efficiently. Therefore, the individual's perception of benefits such as transaction speed, convenience, and immediacy obtained from using a bank's mobile application are important antecedents affecting PE" (Thusi & Maduku, 2020). Many studies in the literature have revealed a positive and significant relationship between behavioral intention (BI) and PE (Yu, 2012; Bhatiasevi, 2016; Gupta et al., 2019; Boonsiritomachai & Pitchayadejanant, 2019; Morales, & Trinidad, 2019; Varma, 2018). In this context, PE is expected to positively affect BI specifically for Islamic banking customers (Raza et al., 2019; Johar, & Suhartanto, 2019).

H_1: Performance expectancy (PE) has a positive effect on behavioral intentions (BI) to use Islamic banking mobile applications.

Effort Expectancy (EE)

The concept that expresses an individual's perception that they can use the relevant technology easily is defined as effort expectancy (EE) (Sair & Danish, 2018; Tannady et al., 2024). Effort expectancy is a predictor derived from the "perceived ease of use" variable found in the Technology Acceptance Model (TAM) (Cimperman et al., 2016). Having a more understandable interface in mobile banking applications may affect BI by enabling Islamic bank customers to carry out their transactions through mobile banking with less effort. In addition, the complexity and ease of use of mobile banking applications can directly affect users' decisions to adopt or reject this technology (Dandena et al., 2020). Designing appropriate mobile banking interfaces for physically disabled individuals and elderly people with visual impairments is particularly important in terms of inclusivity. In this context, when the studies in the literature are examined, it is seen that EE positively affects BI (Yu, 2012; Baptista & Oliveira, 2015; Chao, 2019), and the following hypothesis is proposed:

H_2: Effort Expectancy (EE) has a positive effect on behavioral intentions (BI) towards the use of Islamic banking mobile applications.

Social Influence (SI)

Venkatesh et al. (2003) expressed social influence (SI) as the entirety of the impact of the opinions and expectations of people around an individual (such as family and friends) on the individual's decision to adopt or use a technology. SI is thought to have a significant impact on people, especially in developing countries (Chaouali et al., 2016). Some studies in the literature also support this view (Bhatiasevi, 2016; Yu, 2012; Singh, & Srivastava, 2014). In a study conducted in Pakistan, it was found that the influence coming from word-of-mouth communication is the most important factor affecting the use of mobile banking (Kazi & Mannan, 2013). Bidar et. al., (2014) in Türkiye, and Sitorus et al., (2019) in Indonesia reached similar findings. In this context, it is assumed that the same effects are valid for Islamic banking mobile customers as well, and the following hypothesis is proposed;

H_3: Social influence (SI) has a positive effect on behavioral intentions (BI) towards the use of Islamic banking mobile applications.

Facilitating conditions (FC)

Facilitating conditions (FC) express individuals' beliefs about external support and resources for using a technology (Venkatesh et al. 2008). FC is a variable that directly affects the adoption of mobile banking (Oliveira, et al. 2014). In this respect, it is necessary for banks to focus on FC in order to increase the use of mobile banking (Farah, et al., 2018).

In order to benefit from mobile banking services, individuals need to have basic skills related to the use of mobile phones, competence in providing internet connection, and technical knowledge about the installation of local applications (Er & Karagöz, 2022). In this respect, increasing bank customers' technical knowledge and skills may lead to an increase in facilitating conditions and a positive effect on the intention to use mobile banking (Kuzu, 2014). In addition, considering that mobile banking services are internet and information technologies-based services, access to these services and tools may have a positive effect on FC. Thus, customers' intentions to use Islamic banking mobile applications can be increased. In the literature, there are studies showing that FC positively and significantly affects individuals' behavioral intention (Lim et al., 2023; Gharaibeh, 2018; Mostafa & Eneizan, 2018). On the other hand, a small number of studies have not found a significant relationship between these variables (Makanyeza, 2017). Accordingly, the following hypothesis is proposed:

H_4: Facilitating conditions (FC) positively affect the usage behavior (UB) of Islamic banking mobile applications.

Behavioral Intention (BI) and Usage Behavior (UB)

Behavioral intention (BI) is defined as the level at which an individual makes a conscious plan to perform or not perform a specific behavior in the future (Chao, 2019). This concept is considered an important variable in understanding individuals' attitudes and behaviors towards technology use and is often addressed within the framework of the Technology Acceptance Model (TAM) (Santouridis & Kyritsi, 2014; Kesharwani & Singh Bisht, 2012; Marakarkandy et al., 2017). Research on the effect of behavioral intention on mobile banking use reveals various findings based on different theoretical approaches.

In a study conducted by Safitri et al. (2024), it was concluded that hedonic motivation and habit factors positively affect behavioral intention, but this intention does not affect actual usage behavior. In contrast, a study conducted by Rachmawati et al. (2020) showed that performance expectancy, effort expectancy, social influence, and facilitating conditions

significantly affect behavioral intention, and this intention directly guides usage behavior. Safira & Baridwan (2018) confirmed that perceived usefulness, social influence, and facilitating conditions positively affect behavioral intention, but perceived ease of use and price value do not have a significant effect on behavioral intention.

Usage behavior (UB) refers to the level at which Islamic banking customers actively use mobile applications. Studies in the literature have revealed different results regarding whether BI affects UB. For example, studies by Rachmawati et al. (2020), Iskandar et al. (2020), and Yu (2012) revealed that behavioral intention positively affects usage behavior, while the study conducted by Safitri et al. (2024) concluded that behavioral intention does not affect usage behavior. These differences indicate that the effect of behavioral intention on technology use may vary depending on contextual and individual factors.

In this context, the following hypothesis is proposed:

H_5: Behavioral intention (BI) positively affects the usage behavior (UB) of Islamic banking mobile applications.

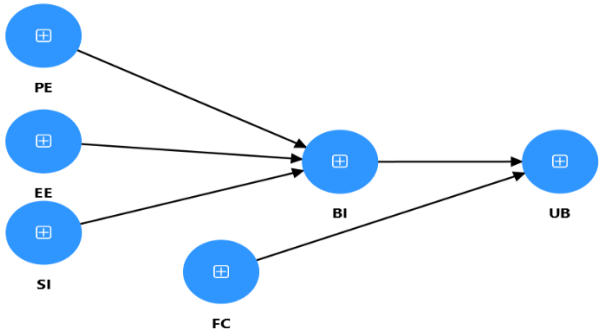


Figure 1. UTAUT Model

Literature Review

A large portion of studies in the literature examining the acceptance of mobile and internet banking are built upon models such as TAM (Technology Acceptance Model), IDT (Innovation Diffusion Theory), DOI (Diffusion of Innovation Theory), TFF (Task Technology Fit), TBP (Theory of Planned Behavior), and UTAUT. Some of these studies have been expanded or integrated with other theories, turning into research where more comprehensive analyses are conducted. Studies conducted specifically with Islamic bank customers using the UTAUT/UTAUT2 model can be summarized as follows:

Saeed (2011) combined the UTAUT model with the innovation diffusion and pervasive computing framework, showing that Accessibility, Excitability, and Ease of Navigation affect mobile banking use. Raza et al. (2019) modified the UTAUT model to examine the effects of variables such as Performance Expectancy, Facilitating Conditions, Social Influence, Effort Expectancy, Perceived Value, Habit, and Hedonic Motivation on mobile banking intention, and found that all variables except Social Influence had a positive effect on Behavioral Intention. Khan et al. (2019) expanded the UTAUT model with the Openness to Experience personality factor and revealed that Trust strengthens the relationship between Behavioral Intention and Use Behavior. Mansour (2020) integrated the UTAUT model with the DeLone & McLean IS model and found that System Quality had the greatest effect on mobile banking usage intention. Susilowati et al. (2021) confirmed the significant effects of Hedonic Motivation, Habit, and Facilitating Conditions on Behavioral Intention using the UTAUT2 model. Mohd Thas Thaker

et al. (2022) used the UTAUT2 model to examine the effects of variables such as Performance Expectancy, Effort Expectancy, Price Value, Facilitating Conditions, and Habit on Behavioral Intention, and showed that Facilitating Conditions and Habit have a direct effect on Use. Harahap (2023) revealed the positive effects of Hedonic Motivation, Price Value, and Habit on Behavioral Intention with the UTAUT2 model extended with the Islamic Lifestyle variable. Hidayah et al. (2024) stated that Social Influence, Experience, and Habit showed significant effects on Behavioral Intention, but Performance Expectancy and Effort Expectancy did not have a significant effect.

In this context, when the results of the studies in the literature are compared in the context of UTAUT and UTAUT2, the following findings are noteworthy:

In most studies, *behavioral intention* is seen to have a positive and significant effect (Raza et al. 2019; Mohd Thas Thaker et al., 2022). *Effort expectancy* generally has a positive effect, but in some cases it was found to be insignificant (Harahap, 2023; Hidayah et. al, 2024). All studies emphasize that facilitating conditions have an important effect on both behavioral intention and usage. *Habits*, especially in studies conducted with the UTAUT2 model, are seen to have a strong effect on behavioral intention and usage (Susilowati et al., 2021; Harahap, 2023). The effect of *hedonic motivation* on behavioral intention varies according to studies. While some studies indicate a positive and significant effect (Susilowati et al., 2021; Harahap, 2023), other studies found this effect to be insignificant (Mohd Thas Thaker et al., 2022). Factors such as *Islamic lifestyle* (Harahap, 2023) and *trust* (Khan et al., 2019) also appear to have significant effects on mobile banking intention.

The reason why studies in the literature reach different findings is due to the influence of cultural (Islamic lifestyle, social norms), demographic (age, digital experience, user segment), methodological (structures added to the model, measurement validity, statistical techniques), and ecosystem-related (system quality, access and support, regulatory environment) factors. Within the framework of UTAUT/UTAUT2, while the strong effects of habit and facilitating conditions on usage and intention consistently appear in different contexts (Susilowati et al., 2021; Mohd Thas Thaker et al., 2022; Harahap, 2023), the effects of variables such as hedonic motivation and social influence vary depending on context and sampling (Raza et al., 2019; Harahap, 2023; Hidayah et al., 2024). In addition, the strengthening role of trust (Khan et al., 2019) and the dominant effect of system quality (Mansour, 2020) show that added structures and quality dimensions can reshape the results. In this context, this study is important in terms of being among the rare studies that empirically test Islamic banking mobile applications with UTAUT in the Türkiye-specific context and providing distinctive findings.

Methodology Research

Design and Scale Adaptation

In the study, the traditional UTAUT model was used as the scale. The reason for preferring the UTAUT model is that it combines 8 different models and has high explanatory power (Zhou, 2008). This model quantitatively addresses four basic constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions. In addition, due to the limited number of UTAUT-based studies in the context of Islamic banking in Türkiye, a methodological preference was made to first consolidate the core relationships. Accordingly, the additional variables in UTAUT2 (habit, hedonic motivation, price value) were excluded from the scope of the study. UTAUT-based models in the literature were examined, and within the scales obtained, the English survey questions were adapted into Turkish with the help of experts. Then, English and Turkish tests were conducted with a group of 25 people. The obtained Cronbach's α (>0.70), AVE (>0.50), and CR (>0.70) results were calculated above the

critical values, and comprehensibility and reliability tests were carried out. Thus, scale validity was ensured. The scale of the questionnaire, prepared in the form of a 5-point Likert-type scale, is shown in Table 1.

Table 1. Scale Questions

Performance Expectancy (PE) Venkatesh et al., (2003)	- Using participation bank mobile applications allows me to perform my financial transactions faster. - Participation bank mobile applications help me meet my banking needs more efficiently. - Participation bank mobile applications enable me to make my financial decisions more easily.
Effort Expectancy (EE) Venkatesh et al. (2003) Davis (1989)	- Using the participation bank mobile application is quite easy for me. - The interface of participation bank mobile applications allows me to perform transactions easily. - I do not need to put much effort into understanding the features of participation bank mobile applications.
Social Influence (SI) Venkatesh et al. (2003) Ajzen (1991)	- My family and friends support me in using the participation bank mobile application. - People around me use the participation bank mobile application and recommend it to me. - The use of the participation bank mobile application by people around me affects my preference for this application.
Facilitating Conditions (FC) Venkatesh et al. (2003) Thompson et al., (1991)	- I have sufficient technical infrastructure to use the participation bank mobile application (for example, internet connection and smartphone). - The support services provided by participation banks make it easier for me to use the mobile application. - I have sufficient knowledge regarding the use of participation bank mobile applications.
Behavioral Intention (BI) Venkatesh et al. (2003)	- I am considering using the participation bank mobile application. - I plan to use this application regularly in the future.
Use Behavior (UB) Venkatesh et al. (2003)	- I am actively using the participation bank mobile application at the moment. - I regularly prefer the participation bank mobile application for my banking transactions.

Sample and Data Collection

The research investigates the factors determining the use of mobile banking by customers living in Türkiye and using Islamic mobile banking services. In this context, the "convenience sampling method" was used as the sample, and Islamic banking customers were selected as the target audience. Then the scale was prepared and turned into a questionnaire.

The survey basically consists of two sections. The first section covers the participants' demographic characteristics (gender, income level, education), while the second section is

designed to examine the subject of the research. Participation in the survey was sent to some participants as an internet link, while it was administered in the form of a form for some participants due to security concerns. A total of 267 people were surveyed. The data collected from the survey forms were entered into the system manually.. Additional questions about "the use of Islamic banking mobile applications" were added among the survey questions. Thus, by differentiating customers who are conventional bank customers but participated in the survey as Islamic bank customers, their data were deemed invalid. In addition, some participants were not included in the sample because they filled out the survey forms incompletely. Thus, the survey data of 199 participants were deemed suitable for analysis.

Ethical Considerations Regarding the Scale

Participation in the study was based on voluntariness, and the confidentiality of participants' personal information was protected. Prior to the survey, an informed consent form was presented, participants who did not give consent were prevented from continuing the survey, and compliance with ethical rules was observed. An application was made to the ethics committee of Kırıkkale University Social and Humanities Research for the scale, and permission numbered 350133 was obtained.

Research Method

SmartPLS 4.0 was preferred as the analysis program in the study. SmartPLS (Partial Least Squares) is considered a powerful analysis tool in research that uses a variance-based partial least squares approach and especially includes Structural Equation Modeling (SEM) (Kim et al., 2008). In this context, the main reasons for preferring the SmartPLS program are that it is suitable for working with relatively small sample sizes, does not show strict dependence on the multivariate normal distribution assumption, allows simultaneous evaluation of measurement (outer) and structural (inner) models, and supports a prediction-focused modeling approach (Henseler, Hubona and Ray, 2016).

Table 2. Demographic Structure of the Research

	Demographic Characteristic	**Number**	**Frequency (%)**
Gender	Man	112	56
	Woman	85	42
	Other	2	1
Income Level	1-17 002 TL	67	33.5
	17 002-45 686	50	25
	45 686-100 000TL	57	29
	100.000 TL and above	25	12.5
Education	Primary School	3	1.5
	Middle School	9	4.5
	High School	45	22.5
	University	109	54.5
	Master's Degree/PhD	33	17

The sample (n=199) exhibits a distribution with a predominance of males in terms of gender. Income level is concentrated in the middle segments across lower (1–17,002 TL: 33.5%), middle (17,002–45,686 TL: 25%; 45,686–100,000 TL: 29%), and upper (≥100,000 TL:

12.5%) brackets. The educational profile of the sample is distinctly high. 54.5% of the participants are university graduates, 17% have postgraduate degrees (a total of 71.5%); the high school rate is 22.5%. The total for primary and middle school is only 6.0%. This increases the level of comprehension of the survey. This demographic structure indicates the formation of a sample clustered in highly educated and middle-income bands, with a male predominance in gender.

Analysis and Results

Measurement Model

Within the PLS-SEM approach, it is necessary to verify the reliability and validity of the measurements. To this end, Cronbach's alpha and composite reliability (CR) will be reported for internal consistency; item loadings and AVE for convergent validity; the Fornell–Larcker criterion for discriminant validity; VIF for multicollinearity; and SRMR for overall model fit.

Within the scope of the study, the analysis model developed is built upon four main independent variables: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). Through these variables, individuals' intentions to use the technology (Behavioral Intention - BI) and indirectly their actual usage behaviors (Use Behavior - UB) were attempted to be measured. The indicators for each variable and the outer loading values of these indicators are presented in detail in the 2nd and 3rd columns of **Table 3**. In the literature, it is stated that outer loading values should be above 0.70 as an acceptable level (Hair et al., 2021). In this context, it has been observed that all coefficients in the model are in the range of 0.816 to 0.963 and are above the critical threshold value.

In the literature, it is emphasized that Cronbach's Alpha, rho_A, and Composite Reliability (CR) values used to evaluate the internal consistency of the scale and the reliability of the model should be above 0.70 (Hair et al., 2010; Fornell & Larcker, 1981; Ramayah et al., 2010; Kline, 2023; Sarstedt et al., 2021). When the data in columns 4–6 of **Table 3** are examined, it is seen that these coefficients are at least 0.798 and at most 0.961. These results reveal that the model meets the criteria stated in the literature in terms of internal consistency and reliability. In addition, it is stated that the Average Variance Extracted (AVE), which expresses convergent validity in factor analysis, should be higher than 0.50 (Fornell & Larcker, 1981). The AVE values presented in the 7th column of **Table 3** are above this threshold and support the convergent validity of the model.

Table 3. Measurement Model Test Results

1	2	3	4	5	6	7	8	9	10
Latent Variable	Indicators	Outer Loadings	Cronbach's Alpha	rho_A	Composite Reliability	(AVE)	R Square Adjusted	T Statistic (Measurement Model)	VIF (Outer Model)
PE	PE_1	0.948	0.918	0.925	0.948	0.859		38.122	4.227
	PE_2	0.935						33.131	3.748
	PE_3	0.898						17.511	2.703
EE	EE_1	0.941						32.125	3.967

	EE_2	0.949	0.938	0.939	0.960	0.890		34.774	4.524
	EE_3	0.939						31.777	4.063
SI	SI_1	0.918	0.905	0.911	0.940	0.840		27.839	2.895
	SI_2	0.937						23.176	3.739
	SI_3	0.894						18.776	2.668
FC	FC_1	0.871	0.798	0.800	0.882	0.713		13.785	1.901
	FC_2	0.845						12.698	1.785
	FC_3	0.816						11.645	1.549
BI	BI_1	0.950	0.894	0.895	0.950	0.904	0.731	25.461	2.894
	BI_2	0.952						29.248	2.894
UB	UB_1	0.961	0.919	0.919	0.961	0.925	0.738	27.476	3.609
	UB_2	0.963						46.497	3.609

The fact that the R Square values in the 8th column of **Table 3** are at the level of 0.731 for BI and 0.738 for UB confirms that the model has high explanatory power in line with theoretical expectations. When the T statistics regarding the significance of the path coefficients are examined, the T statistics of all indicators in the table are much higher than 1.96, which indicates that all indicators in the measurement model exhibit a statistically significant and strong relationship in explaining the relevant latent variables. No issue indicating multicollinearity is observed in the inner model. Because the VIF values remain below the accepted thresholds (generally 5, and 3.3 in a more prudent approach) for all predictors (Hair et al., 2021). While the VIFs of PE, EE, and SI predicting BI are in the range of 2.70–4.52, the VIFs of BI and FC predicting UB are approximately in the range of 1.55–2.89.

Table 4. Discriminant Validity

Fornell-Larcker Criterion

	BI	EE	FC	PE	SI	UB
BI	**0.951**					
EE	0.817	**0.943**				
FC	0.702	0.744	**0.844**			
PE	0.754	0.814	0.712	**0.927**		
SI	0.766	0.731	0.655	0.718	**0.917**	
UB	0.843	0.800	0.716	0.720	0.681	**0.962**

Fornell-Larcker criterion is a classic and widely used measure in the evaluation of discriminant validity in the measurement model (Hair, Sarstedt & Ringle; 2019; Wang and Netemyer, 2002). Its fundamental importance lies in limiting conceptual overlap and potential measurement confounds by ensuring that each construct explains more shared variance with its own indicators than with other constructs (Fornell and Larcker, 1981). In **Table 4**, the fact that the bold values are greater than the values in their own row and column indicates that the measurement model provides discriminant validity.

Table 5. Model Fit Table (Estimated model)

	Original sample (O)	Sample mean (M)	95%	99%
SRMR	0.031	0.029	0.039	0.046
d_ULS	0.131	0.120	0.206	0.282
d_G	0.252	0.198	0.296	0.355

Table 5 shows the model fit results. The fact that the SRMR value is O=0.030 indicates that it is below the widely accepted threshold of 0.08, meaning that the model exhibits a good level of residual-based fit (Hu & Bentler, 1999). Henseler and colleagues (2016) argue that, for model fit to be considered acceptable, the d_ULS and d_G discrepancy measures should not exceed the 95% upper quantile values (HI 95% for d_ULS and HI 95% for d_G) obtained through the bootstrap procedure. The discrepancy measures were found to be O=0.131 (M=0.115) for d_ULS and O=0.252 (M=0.252) for d_G. When compared with the bootstrap-based upper quantiles, the fact that d_ULS remains below HI95=0.206 and HI99=0.282, and d_G remains below HI95=0.296 and HI99=0.355, indicates that it meets the criterion proposed by Henseler et al. (2016). In addition, the closeness of the Original and Sample mean values indicates high stability among the bootstrap samples.

Structural Model

In Table 6, the structural model results are addressed with respect to the hypotheses. The strong and significant effect of BI→UB (β=0.762; t=4.279; p<0.001) indicates that the fundamental assumption of the model has been accepted. Among the determinants of BI, while EE (β=0.539; t=3.106; p=0.002) and SI (β=0.366; t=3.677; p<0.001) exhibit significant and positive effects, on the other hand, PE (β=0.072; t=0.414; p=0.679) did not statistically explain BI. There was no direct effect of FC on UB (β=0.202; t=1.106; p=0.269). These results show that the main determinants of BI are EE and SI, and through this mediation, BI also affects UB to a high degree. In contrast, the effects of PE on BI and FC on UB are statistically not significant.

Table 6. Structural Model Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	t-statistics (|O/STDEV|)	p-value	Hypothesis: Reject/Accept
PE →BI	0.072	0.074	0.174	0.414	0.679	H_1: Reject
EE → BI	0.539	0.541	0.174	3.106	0.002	H_2: Accept
SI → BI	0.366	0.361	0.100	3.677	0.000	H_3: Accept
FC → UB	0.202	0.183	0.183	1.106	0.269	H_4: Reject
BI→UB	0.762	0.781	0.178	4.279	0.000	H_5: Accept

The findings obtained partially overlap with and partially diverge from the results presented by traditional mobile banking and Islamic mobile banking studies based on UTAUT/UTAUT2 in the literature. First, the strong and significant BI→UB relationship (β=0.762; p<0.001) is consistent with studies showing that BI drives UB in different contexts (Rachmawati et al., 2020; Iskandar et al., 2020; Yu, 2012). This also supports the core assumption of UTAUT. Among the determinants of BI, the positive and significant effects of EE and SI are consistent with the literature emphasizing the effects of PE, EE, and SI in mobile banking (Yu, 2012; Baptista & Oliveira, 2015; Chao, 2019; Bhatiasevi, 2016; Chaouali et al.,

2016; Kazi & Mannan, 2013; Sitorus et al., 2019). In contrast, the PE→BI relationship being insignificant contradicts findings in most studies that PE is a strong predictor (Bhatiasevi, 2016; Gupta et al., 2019; Varma, 2018; Raza et al., 2019). However, it has also been observed that the effect of PE weakens in some studies with Islamic banking contexts or where cultural and sample differences are prominent (Hidayah et al., 2024; Harahap, 2023). This can be contextually explained by factors such as the saturation of benefit perceptions among Islamic banking users in Türkiye, with preferences being shaped by ease of use and social norms rather than marginal benefit. Finally, the direct effect of FC on UB being found insignificant, while partially diverging from studies in the literature (Mohd Thas Thaker et al., 2022; Susilowati et al., 2021; Lim et al., 2023), is consistent with the literature reporting that FC may be weak or insignificant in some contexts (Makanyeza, 2017). The reason for the divergence of the study findings from the literature may be factors such as the widespread provision of technical infrastructure and access in the Turkish sample, which reduces the explanatory power of FC and makes its effects more indirect through the intention channel.

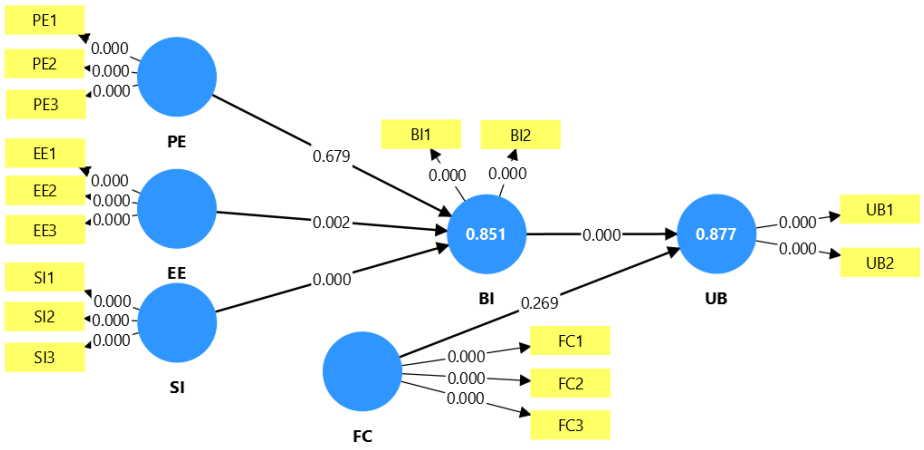


Figure 2. Results

Conclusion and Policy Recommendations

This study, which addresses the adoption of Islamic banking mobile applications in Türkiye within the UTAUT framework, exhibits strong internal consistency in terms of measurement and structural model findings. In the measurement model, the fact that all outer loadings are in the range of 0.816–0.963 and that reliability/validity indicators (Cronbach's alpha, rho_A, CR, AVE) are above the thresholds, as well as the fulfillment of discriminant validity according to the Fornell-Larcker criterion, confirms the construct validity of the scales used. In the model fit indices, the SRMR being below the 0.08 threshold and the d_ULS and d_G values not exceeding the upper bootstrap quantiles support the suitability of the estimated model.

Structural model results reveal that behavioral intention (BI) explains usage behavior (UB) strongly and significantly (β=0.762; $p<0.001$). Among the main determinants of behavioral intention, effort expectancy (EE) (β=0.539; p=0.002) and social influence (SI) (β=0.366; $p<0.001$) stand out, while performance expectancy (PE) did not have a statistically significant effect on BI (β=0.072; p=0.679). The direct effect of facilitating conditions (FC) on UB was also not significant (β=0.202; p=0.269). The explanatory power of the model is high (R^2_adj: BI=0.731; UB=0.738). This picture suggests that the adoption of Islamic banking

mobile applications in Türkiye progresses more sensitively to ease of use and social norms rather than perceived usefulness, and that infrastructure and support elements may influence not directly but rather through more indirect channels.

Since the findings show that behavioral intention is most determined by ease of use (EE) and social influence (SI), banks can simplify flows in the most frequent transactions and reduce time costs, shorten the learning curve with application hints and micro-trainings at first use, and increase inclusiveness by systematically implementing accessibility standards (such as high contrast, large font). To strengthen social influence, in-app invitation mechanisms, real user feedback, and accompanying support in critical transactions can be used. Since the insignificance of performance expectancy (PE) points to benefit saturation, the value proposition can be substantiated with marginal gains such as transaction time guarantees, personalized shortcuts, and one-touch execution of routine tasks. Although the direct effect of facilitating conditions (FC) is weak, establishing 24/7 support channels may support intention. Data portability that facilitates the transition from conventional banking, first-transaction incentives, and feedback loops can accelerate the strong transition from BI to UB. Finally, improvements can be made through behavioral analytics tests such as activation, first transaction time, and completion rate. In addition, short videos and training programs suitable for different digital literacy levels can be implemented.

The present study can be designed within a framework that utilizes the UTAUT2 model and also takes into account the religious sensitivity levels of Islamic banking customers. In this context, additional variables such as religious sensitivity, trust, and Sharia compliance can be added to the model.

Author Contribution

All processes of this study (design, data collection, analysis, writing and editing) were carried out equally by the corresponding author, Yunus Kutval.

Ethics committee approval

Participation in the study was voluntary, and participants' personal information was kept confidential. An informed consent form was provided before the survey, those who did not consent were unable to proceed, and ethical guidelines were followed. An application was submitted to the Ethics Committee of Kırıkkale University Social and Humanities Research for the scale, and permission number 350133 was obtained. Support has been received from artificial intelligence platforms for translation.

Conflict of interest statement

There is no conflict of interest with any person/institution in the prepared study.

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