IEEE
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Impact of Attitude on Adoption Intention Based Upon Customers Behavior Mobile Banking

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Abstract— the present study aimed to examine the causal relationship of "convenience," "ubiquitous," "relative advantage," and "adoption Intention" with mediating role of attitude toward adoption among Agriculture Bank customers in Iran. A sample of 352 customers (187 female and 165 male) were selected, applying the method of availability sampling as participants in this study. Participants completed the scales of convenience, ubiquitous, relative advantage, adoption intention, and attitude toward adoption. Data analyzed by using Pearson correlation coefficient and path analysis. There was a significant positive relationship between conveniences, ubiquitous, relative advantage, adoption intention, and attitude toward adoption. The proposed conceptual model's finding supported the influence of variables convenience, ubiquitous, relative advantage, and attitude toward adoption-on-adoption intention.

Keywords— Mobile Banking, Accept Innovation, Value, Behavior Customer, path Analysis

I   INTRODUCTION

Over the past decades, high-speed development in technology transformed how people act and behave [1][2]. Today, access to information and communication is one of the most basic development methods in institutions and organizations. Expansion of the internet and mobile banking, and wireless technology leads to a significant change in the practices and customers' priority, who began applying digital media to distribute relevant about themselves and interact with organizations and use innovative mobile banking technology [3][4]. Mobile Banking can be defined as a service or product provided by a bank or financial institution for managing financial and non-financial activities utilizing a smartphone, mobile device, or tablet and giving mobile devices extremely high portability and mobility. This development service has many benefits, including convenience, ubiquity, and cost-efficiency for customers [5][6][7]. This development service has many benefits, including convenience, ubiquity, and cost-efficiency for customers. In specific, any payment through a mobile device to initiate, verify and confirm the exchange of financial value for goods services is defined as mobile payment. Thus, mobile payments are expected to have a bright future[8]. It generally features that human attitudes and behaviors toward innovation are affected by someone's cultural positioning, especially behaviors that result from the cultural variation of the origin's country [9][10]. In like manner, national cultural specifications can influence customers' decision-making by developing perceptiveness and preferences for innovations, services, and products[11].

Various models, research technology, and innovation acceptance are commonly used to examine mobile banking adoption factors, including Diffusion of Innovation Theory (IDT)[12], Technology Acceptance Model (TAM)[13], Theory of Planned Behavior(TPB) [14], the Decomposed Theory of Planned Behavior (DTPB) [15], Behavioral Reasoning Theory (BRT) [16], the Unified Theory of User Acceptance of Technology (UTAUT) [17] and developed UTAUT [17] have been utilized to explain the mobile banking adoption.

Therefore, noticing and comprehending the customers' attitudes toward adoption and adoption intention accepting (or continuing to use) mobile banking is one of the primary requirements for improving mobile banking services. In this research, we utilized the hypothetical model for technology acceptance to comprehend the intention of customers to adopt mobile banking. The existing investigation has independently inspected the backgrounds of mobile banking adoption [18][3][19].

With all the issues mentioned, should identify customers' mental concerns for accepting and using the bank mobile according to getting this technology to encourage customers to use this technology with the least risk. As a result, many researchers centralized mobile banking adoption intention in academic research for years. Studies that have investigated a set of variables related to adoption intention are provided in the theoretical framework.

II   THEORETICAL FRAMEWORK

Technology acceptance model

The study of user responses to a new topic or technical improvement is a significant issue in this era of accepting innovation. Many researchers have studied different theoretical approaches. Customer characters have been observed as a meaningful predictor essentially in discovering behavioral issues. Some popular theoretic models for discovering technology acceptance factors are listed in table I.

TABLE I THEORETIC MODELS CONCERNING TECHNOLOGY ADOPTION INTENTION.

S. No	Model Name	Antecedents of the Model	Propounded By

1	Technology acceptance model (TAM)	Perceived ease of use (PEOU), perceived usefulness (PU), behavioral intention to use (BI), actual usage (AU), and attitude towards usage (ATT)	[13], [20]
2	Theory of reasonable action (TRA)	Subjective norms (SN), motivation to comply by (MTC), behavioral beliefs (BB), attitude towards the behavior (ATT), normative beliefs (NB), behavior (B), outcome evaluation (OE), behavioral intention (BI)	[21]
3	Unified theory of acceptance and use of technology (UTAUT)	Effort expectancy (EE), performance expectancy (PE), intention to use (INT), social influence (SI), facilitating environment (FC), and actual usage.	[17]
4	Innovation diffusion theory (IDT)	Compatibility (COM), Relative advantage (RA), adoption intention (INT), trialability (TRA), complexity (COMP), observability (OBS),	[22]
5	Theory of planned behavior (TPB)	Subjective norms (SN), behavior (B), intention (INT), attitude (ATT), behavioral control (PBC)	[14]
6	Decomposed Theory of Planned Behavior (DTPB)	Behavior intention (BI), attitude (ATT), subjective norms (SN), perceived behavior control (PBC)	[15]
٧	behavioral reasoning theory (BRT)	reasons for, reasons against, global motives (attitude (ATT), subjective norm (SN), and perceived behavioral control (PBC)), Intentions to use (IU)	[16]

These theoretical methods have been empirically validated in many research activities to explain user behavior and the intention to accept new knowledge.

Agyei et al.[23] the study investigated the influence of character attributes upon users' intention to embrace mobile banking. The outcomes display that agreeableness, conscientiousness, and openness to the new experience remarkably affect the intention of users to use mobile banking in understanding the usefulness and ease of use, which has the strongest overall agreeableness followed by conscientiousness. Additionally, the outcomes reveal that perceived usefulness and ease of use are favored predictors of users' intention to adopt mobile banking.

Hanafizadeh et al.[24] attempt to answers the questions of as bank customers information about IB services and benefits effectively reduces the negative impact of perceived customer risk on IB approval intent? The outcomes showed that awareness of IB acts as a factor to reduce the overall perceived risk dimensions (social, financial, performance, including security and privacy, time). Furthermore, they found that, apart from social risk, different dimensions of perceived risk had a negative impact on IB approval intent.

Jonathan et al.[25] research inspect behavioral intent to adopt mobile banking and develop a hybrid model to comprehend the factors facilitating or preventing mobile banking from concentrating on customers in Taiwan and Vietnam. For subjective norms have a significant effect on

the intention to utilize, it was found that the three characteristics of mobile banking (compatibility, perceived risk, and perceived usefulness) have an indirect factor in the intention to accept mobile banking via a customer-centric approach in Taiwan and Vietnam. In addition, the intent to accept mobile banking was indirectly impressed by the facilitation of requirements and self-efficacy and was straight influenced by understood behavioral control inside both countries.

Puschel et al.[26] studied integrated to investigate mobile banking technology's adoption intention and examination it in the Brazilian context. The structure suggests an integrated show using into account the best predictor than other studies on adopting innovations. As non-users, the framework explained almost 69 percent of the affiliate variable (intent to adopt mobile banking) diversity, which is higher than those attained in prior studies. Nevertheless, the framework solely explained 27 percent by the dependent variable modification concerning present mobile banking users. It was recognized that the predictors' efficacy on the criterion variable remained various for every collection of mobile banking users and non-users.

Research model and hypotheses

The study model examined in this investigation is showed in Fig.1. Previous studies in the literature describe the purposed constructs and hypotheses:

Relative Advantage

The relative advantage of the significant determinants of mobile banking adoption is a relative advantage as the grade which innovation can bring benefits to the organization [12][27][28]. The observed relative advantage has an affirmative efficacy on technological innovation in increasing the acceptance rate [29]. We conclude that mobile banking is likely to have a positive adoption intention when users comprehend certain benefits offered by mobile banking [30].

Convenience

Convenience has been discussed as an essential variable in many types of research in marketing consumer behavior. Many believe that technology has many benefits; They have this attitude, especially when technology makes their lives easier and their daily tasks easier [31]. It is also one of the essential factors in gaining a competitive advantage in mobile commerce and states that, compared to other tools, the availability of any has time and place [32]. Mobile communication networks and mobile technology are currently increasingly used in a wide range of public uses, which can provide an excellent platform for using mobile banking services. Many people believe deeply in the advantages of technology, though only while technology is premised upon the presupposition to make life comfortable for people and improve everyday tasks. [33].

Ubiquitous

Being available anywhere and anytime simultaneously is defined as ubiquitous. In other words, Ubiquitous is a combination of any time and any place utilities that may have efficacy on the user's determination to use a specific system. This calculation is a principle in computer science and software engineering. The power of computing appears with

any device and without restrictions in any place and at any time [34], [35].

Attitude toward Adopting

Attitude toward adopting the behavior models attempts to forecast the purpose as it is considered a strong predictor of behavior. Attitude is defined as a positive or negative feeling about doing the goal behavior [36]. An individual attitude toward a behavior is the product of attitude beliefs (the individual's mental probability) in evaluating those consequences (direct evaluative response to the outcome)[21]. An attitude that illustrates individual evaluation is defined while a psychological process is explicitly assessed by evaluating a unique entity with a certain degree of approval or discredit [37].

Adoption Intention

According to the theory of reasoned action [21], theory of planned behavior [14], and TAM [20], Willingness to use technology means an increasing willingness to support acceptance decisions or an individual's intention to use a new system or technology [13]. BRT theory examines behavior that, like other adoption theories, can be predicted by customer intentions. Global motives (attitudes) affect the intention of the customers, Global motivations (attitudes) affect customer intent, and reasons (agree and disagree) affect attitudes. [16]. the reasons also predict customer intent.[16]. According to the BRT, consumer values and beliefs predict "agree" and "disagree" reasons. Adoption intention desires indicate the strength and intention of an individual due to the intended behavior [37]. However, attitude is a strong predictor of intent in mobile banking. [7], [38].

HYPOTHESES

Based on the outcomes within the literature and the evidence that supports the mediating character of attitudes toward adoption, this research demonstrates a hypothetical model shown in Figure 1. However, the present research had five specific objectives:

H1. Customers' attitudes toward mobile banking will affect their adoption intentions.

H2. Customers' relative advantage mobile banking will affect their adoption intentions.

H3. Customers' ubiquitous mobile banking will affect their adoption intentions.

H4. Customers' ubiquitous mobile banking will affect their attitude toward adoption.

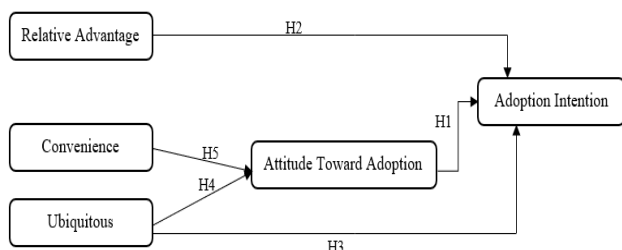H5. Customers' convenience mobile banking will affect their attitude toward adoption.

Fig.1. Hypothesis Model for the Effects of attitude toward adoption, adoption intentions, Convenience, ubiquitous, relative advantage

III   METHODOLOGY

This study used a quantitative investigation model by gathering data. We test the hypotheses through path analysis.

Sampling was conducted by random selection of a group of agricultural bank's customers in Gonbad Kavous city in Golestan province. The sample size of this research remains estimated utilizing the Krejcie & Morgan [39] table. A questionnaire was designed to obtain information with five components: attitude toward adoption (ATA)[32][34] and ubiquitous (UB)[43] relative advantage (RA) [29], convenience (CO)[44], adoption intention (AI)[19]. The theorization supported by Fishbein and Ajzen [21] adoption intention was measured applying a three-cases, and Attitude toward adoption was assessed using three cases, which was consistent with previous studies Ajzen and M. Fishbein [45]. The ubiquitous was developed from the scale proposed by Aithal [46] which consists of three cases. Relative advantage data were expressed in three items and developed from the scale proposed by Luyanda & Phir [47] The scale convenience composed of three items was developed from the scale proposed by Shankar & Rishi [48]. Likert scale was used for all cases. In order to achieve the necessary reliability attributes of studied variables are designed using a five-point Likert scale from 1(Strongly Disagree) to 5(Strongly Agree).

For gathering the data, a quantitative questionnaire has used, the opinion customers on set factors had to be evaluated. A total of 357 questionnaires were distributed, of which 352 were acceptable, and these participants who were requested to fill the questionnaire should have had a bank account and use mobile phones. Participants were 352 customers' (187 female, 165 male) in the period from September 2019 to December 2019. and the distribution of the responder was as follows: In terms of the youth customer in the age range of 30–45 years have 42% more access rate to mobile phones than other age groups and level of education the majority of participants had a high school and Associate degree (30.4%), followed by an Undergraduate degree (51.1%), Master degree and Ph.D. (18.5%) respectively.

For the reliability of the questionnaire, the Cronbach's alpha method (good at coefficient≥0.7) was used. Data analysis was performed by SPSS software. 26 and AMOS version 26, P <0.05 were considered statistically significant. A critical central hypothesis is that the data are normally distributed and multivariate, which means that the SEM variables have to be normally distributed. Therefore, ere data analysis, it is essential to indicate that this measure has been met. Therefore, Q–Q plots checked the commonality of the determination items and recognized no variables have heterogeneity. Moreover, for standard distribution control, we investigated kurtosis and skewness implications. As kurtosis values were between -0.654 and -0.131 and skewness values were between -0.785 and -0.283, they are both well in the agreeable sill of ±1, can state that the data had normal distribution [49].

The normality of the data was examined, and the lineal meaningful amongst the variables was computed. Finally, Comparative-Fit-Index (CFI), Goodness-of-Fit Index (GFI), and Root Means Square Error of Approximation (RMSEA) whom the path analysis performed utilizing.

IV   .ANALYSIS

The interior consists of the expressions used in the research for the determined structures that were accepted with the help of Cronbach's alpha. In addition, we extracted the convergent and distinct effect of the collected data [50].

This study uses confirmatory factor analysis (CFA) to extract cross-loads on dormant structures to determine the relationships between the structures involved in the research, followed by structural equation modeling (SEM). The two-step approach, recommended by Anderson [51] , was employed toward data analysis. The first step was to make a suitable measurement model. The second step was to structural relationships between the latent structures are analysis[24].

measurement model

The first step carries a measurement model that describes the relationship between explicit variables (measured) and latent variables (estimated or factors). In a simple measurement model, there is a latent variable that consists the three explicit variables.

Cronbach's alphas and standard deviations, correlation, and means measures are considered in Table II. They computed the correlation among variables before the model path analysis test. Cronbach's alpha was computed for the questionnaire of value variability, attitude toward adoption, ubiquitous, relative advantage, convenience, adoption intention. This amount for questions in order 0.825, 0.841, 0.802, 0.815, 0.812 indicates that the variables used had an acceptable capability. The discovery describes statistically meaningful associations among all model variables. As consequence, attitude toward adoption is positively and meaningful relevant with Ubiquitous ($r^2 = 0.31$, $p < 0.01$) and convenience ($r^2 = 0.39$, $p < 0.01$). Accordingly, positive meaningful relationships were obtained among relative advantage and adoption intention ($r^2 = 0.31$, $p < 0.01$), ubiquitous and adoption intention ($r^2 = 0.51$, $p < 0.01$), attitude toward adoption and adoption intention ($r^2 = 0.32$, $p < 0.01$). Admitted a meaningful relationship among the high level of internal consistency coefficient and the variables as an indicator of adequacy for path analysis, and therefore was performed path analysis.

TABLEII . MEANS, CORRELATIONS, AND STANDARD DEVIATIONS OF OBSERVED VARIABLES

	α	Mean ± SD	AI	ATA	CO	UB	RA
Adoption intention (AI)	0.812	11.20 ± 2.9	1				
Attitude toward adoption (ATA)	0.825	10.03 ± 1.77	0.320 a	1			
Convenience (CO)	0.815	12.5 ± 3.05	0.453 a	0.390 a	1		
Ubiquitous (UB)	0.841	15.5 ± 2.25	0.518 a	0.314 a	0.526 a	1	
relative advantage (RA)	0.802	9.56 ± 2.69	0.310 a	0.108 b	0.225 a	0.241 a	1
a Correlation is significant at the 0.01 level (2-tailed).							
b Correlation is significant at the 0.05 level (2-tailed).							

Therefore, the model considered in the introduction was applied for the path analysis technique. In this model, adoption intention was attended to as a dependent variable while attitude toward adoption and ubiquitous, relative advantage, and convenience were all considered independent. The maximum probability purpose evaluated model estimation. The outcomes show that the pattern signified an excellent fit for the data (see Table III).

TABLEIII. MODEL OF FIT INDEXES

	CMIN	DF	P	GFI	AGFI	NFI	TLI	CFI	RMESA
Model fit	10.390	2	.002	0.986	0.927	0.965	0.906	0.970	0.095

structural model

The second step constitutes a structural model that recognizes how the factors are associated. The results of path analysis modeling and approval or rejection can see the hypothesis in Table IV.

TABLE IV: RESULT HYPOTHESIS

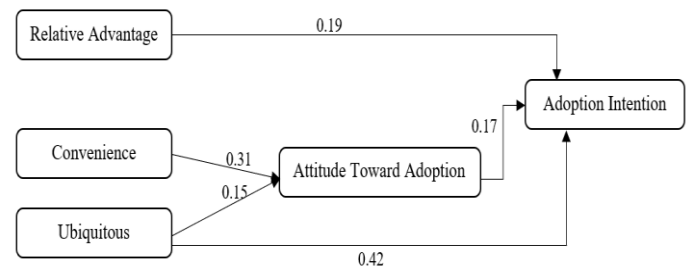| Hypothesis	t-value	β	P	Result
attitude toward adoption => adoption intentions	3.64	0.17	0.01	confirm
relative advantage => adoption intentions	4.26	0.19	0.00	confirm
ubiquitous => adoption intentions	8.75	0.42	0.00	confirm
ubiquitous => attitude toward adoption	2.62	0.15	0.00	confirm
Convenience => attitude toward adoption	5.43	0.31	0.00	confirm

Fig.٢. Results of structural modeling analysis attitude toward adoption, adoption intentions, Convenience, ubiquitous, relative advantage

V   DISCUSSIONT AND RESULTS

This study has proposed an impact of attitude on adoption intention based upon customers behavior mobile banking context. The qualitative analysis has been obtained to extract background-specific reasons for or against the use of m-banking. To evaluate the reasons for employing m-banking, we conducted gathering the data by a quantitative questionnaire has used and the opinion customers on set factors had to be evaluated. The sample included participants of different age groups. The process was adopted via Claudy et al. [52], [53], Westaby et al.[54] was adopted to obtain reasons. Participants were given a list of the reason use mobile banking. The following categories are listed: convenience, saves time, can use it anywhere and anytime (anywhere), ease of use, safer, more reliable than other formats (advantage Relative), is flexible.

This study analyzed customer adoption intentions in mobile banking and mainly aimed to explore the mediating attitude toward adoption concerning ubiquitous and ubiquitous and convenience and adoption intention. The straight efficacy of relative advantage on adoption intention was assessed. Like findings of [19], [30], [43] are in line with the consequence of the present research. This demonstrates meaningful relationships among adoption intention, attitude toward adoption, ubiquitous, convenience, relative advantage. Findings as to relative advantage and adoption

intention parallel to the ones by [19], [55], which found a considerable relationship among convenience, ubiquitous, and adoption intention with attitude toward adoption.

The results explained that attitude toward adoption medicated the impacts of variable ubiquitous and convenience on adoption intention. Ubiquitous and convenience contributed indirectly through the attitude toward adoption to describe the variations in adoption intention. These results align with those of earlier research relationships among attitudes toward adoption, convenience, ubiquitous, and ubiquitous adoption intention [19]. As envisaged, correlational results saw a meaningful relationship between convenience, ubiquitous, and adoption intention on attitude toward adoption and meaningful relationship a relative advantage with adoption intention [56].

To summarize, the existent research evaluated the prominent positions of attitude toward adoption as an intermediary between convenience, ubiquitous, adoption intention, and relative advantage on adoption intention. It was shown that that attitude toward adoption to be a forecasting component in adoption intention. Some constraints of these studies are considered.

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