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USAGE INTENTION IN APP-BASED BANKING: AN EMPIRICAL STUDY USING AMOS

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ABSTRACT

This research examines the principal elements that affect users' proclivities towards the usage of application-based banking systems. A theoretical framework was formulated to discern the most pivotal determinants of usage intention. Empirical data were gathered via a structured Google Form, and subsequent statistical analyses were performed utilizing SPSS and AMOS software. Exploratory Factor Analysis (EFA) was employed in SPSS version 26 to delineate pertinent factors and assess their impact on users' intentions. The research model investigated the interrelations among Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Social Influence (SI), and the intention to engage with app-based banking. The outcomes underscore PEOU as the predominant predictor of intention, trailed by PU, whereas SI was not observed to exert a significant influence.

Keywords: TAM Model, Usage Intention, App Based Banking, CFA

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1. INTRODUCTION

The rapid advancement of internet-enabled technologies is fundamentally reshaping how businesses operate and interact with customers (Ibrahim et al., 2006; Parasuraman & Zinkhan, 2002). This on going technological transformation extends beyond the business sector, permeating the broader fabric of society including the economy, culture, and politics. Within the business landscape, its impact is particularly significant, influencing various industries with varying levels of intensity (Pascucci et al., 2023). In the banking sector, this transformation is driven by increasing cost pressures and shifting customer expectations, prompting banks to adopt digital strategies aimed at reducing operational costs and improving service efficiency. Consequently, traditional infrastructures such as physical branches and in-house data centers are being increasingly replaced or supported by cloud computing and third-party digital service providers (Maiya, 2022). As part of this shift, banks have expanded their digital offerings, providing a range of app based and online services, including mobile banking apps, internet banking platforms, ATMs, and self-service kiosks, which enable customers to carry out transactions in a fast, secure, and convenient manner (Sarel & Marmorstein, 2003; Chiu et al., 2017).

App-based banking has emerged as a preferred mode of financial interaction due to its cost-efficiency, accessibility, and speed. It has significantly improved the delivery of financial services, customer experience, and overall operational efficiency (AlKailani, 2016). Beyond cost savings, app-based platforms are enabling more personalized interactions and innovative service delivery by integrating emerging technologies such as "artificial intelligence (AI), machine learning (ML), and the Internet of Things (IoT)" (Newton, 2018). These developments reflect a broader ecosystem shift where banks collaborate with fintech developers and cloud providers to co-create value-added services. In India, banks are increasingly making strategic investments in digital technologies to stay competitive, comply with regulatory frameworks, and respond to the rapidly changing financial landscape. However, this digital transition is not without challenges factors such as capital constraints, limited employee digital readiness, and rising customer expectations must be effectively addressed to ensure successful implementation (Leung, 2009). Crucially, the effectiveness of digital banking channels hinges on customers' willingness to adopt them. Therefore, understanding the behavioural drivers that shape users' intentions and influence their adoption decisions has become a critical area of focus.

In this context, the present study employs the Technology Acceptance Model (TAM) to analyze the impact of "Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Social Influence (SI)" on customers' intention to use app-based banking services. Previous research on digital banking has primarily addressed factors such as service quality (Gazi et al., 2024; Amin, 2016), transaction speed (Muluka et al., 2015), and customer retention (Bankuoru Egala et al., 2021). However, limited attention has been given to understanding what drives users' intentions to use app-based banking services, especially in the context of behavioral and perceptual factors. In today's mobile-first financial environment, users' intention to adopt such services is significantly influenced by their perceptions of the technology's usefulness and ease of use, as well as by social influence from peers and the broader community. Therefore, this study aims to investigate how Perceived Ease of Use, Perceived Usefulness, and Social Influence affect users' intention to use app-based banking services, employing the Technology Acceptance Model (TAM) as the theoretical foundation. The findings will provide insights into the behavioral dynamics influencing adoption of mobile banking applications. Over the years, TAM has been widely adopted and extended to study digital banking contexts, making it a suitable foundation for this research (Bertrand & Bouchard, 2008).

2. THEORETICAL UNDERPINNING AND DEVELOPMENT OF HYPOTHESES

The Technology Acceptance Model (TAM), developed by Davis (1989) and rooted in the Theory of Reasoned Action (Ajzen & Fishbein, 1991), explains user acceptance of technology based on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). TAM has been successfully applied in various contexts, including internet banking (Marakarkandy et al., 2017; Kesharwani & Bisht, 2012), mobile banking (Luarn & Lin, 2005), and social media platforms (Akturan & Tezcan, 2012; Muñoz Leiva et al., 2017). Compared to other models like TPB, TAM offers greater adaptability in explaining behavioral intention toward digital services (Chau & Hu, 2001; Almulla, 2021). Incorporating social influence as an extended construct further enhances its applicability to digital banking. Therefore, TAM is considered suitable for examining the usage intentions of app-based banking in this study.

3. PERCEIVED EASE OF USE (PEOU)

PEOU is the extent to which an individual believes a specific system is simple to use (Davis, 1989). Customers can perform all traditional banking services at any time with app based baking. Young customers will be encouraged to use app based banking if the interfaces of websites and mobile applications are clear and simple (Tran, 2021). Several studies have found that the ease with which e-banking services can be used as a favorable impact on usage intention (Suhaimi & Hassan, 2018; Martono et al., 2020; Phan & Bui, 2019; Kuruppu et al., 2019). According to Abu-Assi et al. (2014), the usage intention towards electronic banking in Jordan is influenced by PEOU. Similar findings had been reported by Guriting & Ndubisi (2006) in Malaysia and Rawashdeh (2015) in Jordan. Hence, the following hypothesis is proposed by the author based on research conducted on usage intention.

H1: PEOU affects users' usage intention toward app based banking.

4. PERCEIVED USEFULNESS (PU)

According to Davis (1986), PU is another critical factor in system acceptance. According to TAM, PU can direct behavioral intention. Previous research has shown that PU significantly and directly impacts customers' willingness to adopt technology (Khalifa & Ning Shen, 2008; Luarn & Lin, 2005; Guriting & Oly Ndubisi, 2006). The usefulness of a system is linked to its productivity and overall benefits to improve a user's performance to do work. The TAM's central premise is that technology acceptance mediates technology usage determined by two components: PU and PEOU (Jones & Kauppi, 2018). Some studies have revealed that the effect of perceived usefulness in the domain of new technologies supports the construct's significant and positive impact on usage intention (Guriting & Oly Ndubisi, 2006; Oliveira et al., 2016; Khalifa & Ning Shen, 2008; Pham & Ho, 2015). Based on these studies, the below hypothesis is proposed:

H2: PU affects users' usage intention toward app based banking.

5. SOCIAL INFLUENCE (SI)

The degree to which a person takes into account and is deeply impacted by the views of those close to him when deciding on a particular action is known as social influence (Fishbein & Ajzen, 1975). According to Singh & Srivastava (2020), social influence is the process by which individuals change their behaviors in response to the opinions of others. Technology may positively impact users' intentions when using social networks (Musa, 2015). Social influence has been found to be a more critical factor during the initial stages of implementation of innovation because users have limited experience in forming attitudes (Taylor & Todd, 1995; Hartwick & Barki, 1994). Empirical studies show that social influence positively affects behavioral intention to use (Teng et al., 2018). Consumers seek opinions on online banking experiences from their families and friends. Thus, social influence can have an extensive and positive impact on consumers' willingness to use app based banking. As a result, the following hypothesis for this study is posited:

H3: SI positively affects usage intentions toward app based banking.

6. PROPOSED RESEARCH MODEL

Based on previous research on usage intention, the TAM is proposed to investigate 'perceived ease of use', 'perceived usefulness', 'social influence', and 'intention to use' app based banking (figure1).

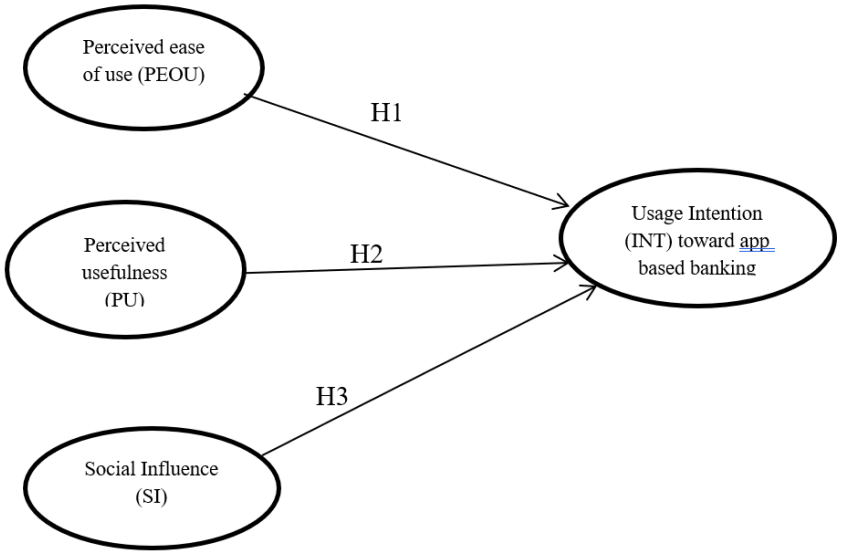

Figure 1 TAM theoretical framework

7. RESEARCH METHODOLOGY

This is an exploratory study, and an online survey was created with Google Forms as this channel is thought to be the most effective for online adoption. Using electronic devices rather than questionnaires, the online channel enables the researchers to collect sufficient data quickly (Jansen et al., 2007). The four constructs covered in this survey were PEOU (Perceived Ease of Use), SI (Social Influence), PU (Perceived Usefulness), and usage intention. A 5-point Likert scale was used to determine user intentions toward app based banking, ranging from strongly disagree (1) to strongly agree (5). The questionnaires were distributed to 200 respondents who conduct routine financial transactions using banking applications. The collected data was examined, and 50 submissions were rejected due to inadequate responses. Finally, 150 responses are analysed in the study. This study employed both independent and dependent variables.

Table 1 Questionnaire

Code	Items	Reference
PEOU	**Perceived ease of use**	Fortes and Rita (2016) , Singh et al. (2020)
PEOU1	App based banking is easy to use.	
PEOU2	Using app-based banking is simple and easy to understand.	
PEOU3	I find it easy to learn how to use app based banking.	
PU	**Perceived Usefulness**	Davis (1989)
PU1	Using app based banking will allow me to pay faster.	
PU2	Use of app based banking will improve the effectiveness of my transactions.	
PU3	Use of app based banking will save my time.	
SI	**Social Influence**	Singh et al. (2020)
SI1	People who matter to me support my use of app-based banking.	
SI2	People close to me suggest using banking services through mobile applications.	
SI3	People who are important to me influence my decision to use app-based banking.	
INT	**Intention to Use**	Singh et al.(2020)
INT1	I will plan to use app based banking when the opportunity emerges.	
INT2	I expect utilising banking services via mobile applications in the near future.	
INT3	I will plan to use app based frequently in my daily life.	
INT4	I will recommend others to use app based banking.	

8. DATA ANALYSIS

The current study used structural equation modelling analysis with Amos-23 software to test the proposed research model and analyse CFA. The statistical analysis and fitness of the model were performed using SPSS 26 and AMOS 23. An Exploratory Factor Analysis (EFA) has been conducted utilizing SPSS version 26.0 to formulate constructs and evaluate the determinants affecting consumers' intentions. Prior to the execution of the Structural Equation Modeling (SEM) analysis, the demographic characteristics of the participants are articulated.

Table 2 Descriptive Statistics for Demographic Characteristics

		Frequency	Percentage (%)
Gender	Male	62	41.3
	Female	88	58.7
	Total	150	100.0
Area	Urban	99	66.0
	Rural	51	34.0

	Total	150	100.0
Monthly Income (in ₹)	<20000	26	17.3
	20000-40000	30	20.0
	40000-60000	27	18.0
	60000-80000	18	12.0
	Above 80000	49	32.7
	Total	150	100.0
Age (in years)	<20	17	11.3
	20-30	53	35.3
	31-40	57	38.8
	41-50	19	12.7
	>50	4	2.7
	Total	150	100.0
Marital Status	Married	90	60
	Unmarried	60	40
	Total	150	100.0
Educational Qualifications	Upto 12th	16	10.7
	Graduation	46	30.7
	Post Graduation	65	43.3
	Professional courses	23	15.3
	Total	150	100.0

Source Primary Data.

According to their age distribution: majority of the respondents (57%) were aged 31-40 years, whereas 53 % of respondents were aged 20- 30 years, 19 % were between the age of 41 & 50, and 17 % were under the age of 20 years. Finally, people over 50 made up 2.7 percent of the population. In terms of gender, the majority of respondents (58.7 percent) were female. Males represented 41.3 percent of the respondents. According to the area, 66 percent of respondents were urban, while 34 percent were from rural area. Participants' educational levels varied, with the majority of respondents (43.3 percent) holding a postgraduate degree. Graduates accounted for 30.7 percent of respondents, while 10.7 percent had education qualifications up to 12th standard, and the remaining (15.3 percent) were having professional degree. In terms of income, 17.3 percent stated their monthly salary was less than ₹20,000, while 20 percent disclosed their income ranged from ₹20,000 to ₹40,000. 18 percent of respondents reported their salary between ₹40000 to ₹60000 while 12 percent receive a salary between ₹60000 to ₹80000. The remaining 32.7 percent of respondents reported an income of more than ₹80000. According to marital status, 60 percent of respondents were married, and the rest, 40 percent, were unmarried.

9. RESULT AND DISCUSSION

The EFA results are presented in this section, followed by CFA (Confirmatory Factor Analysis) to validate the factors. Principal component analysis (PCA) with varimax rotation yields factor analysis results. Internal consistency and reliability were assessed using Cronbach's alpha values which were greater than.70, indicating construct reliability. KMO indicates the sample's adequacy or high variation in the variables observed, whereas, according to Bartlett's test of sphericity, if the correlation matrix is not an identity matrix, factor analysis should be used. Table III shows the values of KMO (.815) and Bartlett's Test (0.000), both of which are significant at 5%. Hence, the reliability of all variables was confirmed (Table 3).

Table 3 Factor Loadings & Cronbach's α

Construct	**Factor Loading**				**Cronbach's α**
	PEOU	PU	SI	INT	
PEOU1	.889				.894
PEOU2	.872				
PEOU3	.863				
PU1		.885			.902
PU2		.891			
PU3		.870			
SI1			.902		.897
SI2			.923		
SI3			.845		
INT1				.889	.922
INT2				.856	
INT3				.811	
INT4				.866	
Kaiser-Meyer-Olkin(KMO)	.815				
Bartlett's Test	.000 (sig.)				

N = 150; (PEOU = Perceived Ease of Use; PU = Perceived Usefulness; SI = Social Influence; INT = Usage Intention)

Table 4 displays correlations within constructs (Convergent validity), composite reliability (CR), and non-correlation between constructs (discriminant validity). All three constructs have CR values greater than 0.70, indicating good reliability and convergent validity. The construct PEOU had the highest CR value (0.840), and the SI had the lowest CR value (0.808) (Anderson & Gerbing, 1988; Hair 2014), revealing an acceptable convergent validity and demonstrating that these indicators consistently reflect the same latent construct. Furthermore, discriminant validity is well established by comparing the square root of AVE and each construct's correlation (Fornell & Larcker, 1981). All constructs' AVEs are greater than 0.5, ranging from 0.590 for PEOU to 0.870 for SI. Hence, table IV shows that all variables have good CR, discriminant, and convergent validity.

Table 4 Composite Reliability, Convergent, and Discriminant Validity

	CR	AVE	PEOU	PU	SI
PEOU	0.840	0.590	**0.768**		
PU	0.836	0.587	0.322	**0.766**	
SI	0.808	0.570	0.239	0.296	**0.755**

SEM Analysis:

Chi-square and Degree of Freedom (2 /df), GFI (Goodness of Fit), Adjusted GFI, (RMSEA) Root Mean Square Error of Approximation, CFI (Comparative Fit Index), TLI (Tucker-Lewis index), and IFI are regularly used CFA indices to test model fit (Incremental fit index). Table V, depicts the values of the various CFA indices.

Table 5 Fitness indices of Modified SEM

Fit Indices	χ2	χ2 /df	GFI	AGFI	TLI	CFI	IFI	RMESA
Model	64.019	1.102	.942	.909	.995	.996	.996	.026
Norms*		>1 and <5	.90		.94	.92	.95	<.05

As shown in Table 5, the CFA results for the intention to adopt mobile banking application scale were compared with the index-wise threshold restrictions Hair et al (2006). The Chi-square to degree of freedom ratio, 1.102, has remained within the acceptable range. The GFI, which ranges from 0 to 1, represents the variation handled by the observed model covariance. According to Hair et al. (2006), the GFI thresholds are a minimum of 0.92, and both scales have been accepted at a GFI value of 0.942. As stated in the table, the observed model met the AGFI fit criteria. CFI is a relative measure of the difference between expected and observed model covariance. This likewise runs from 0 to 1; a number close to 1 represents the best model fit. In the model, the CFI is acceptable as it is 0.996 and greater than the minimum threshold of 0.95. Likewise, TLI of .995 and IFI of .996 also displayed the Goodness of fit model index. Furthermore, the RMSEA of the given model is 0.026, which measures the difference between the specified parameters of predicted and observed covariance. From the above discussion, it can be inferred that intention to use app based banking adequately fits according to confirmatory factor analysis indices.

10. HYPOTHESES TESTING

Path analysis has been carried out to test the hypotheses using the regression weights' effectiveness. The p-value of a path determines its significance. To establish the relevance of each hypothesis path, structural equation modelling (SEM) was used to consider standardized estimates and P value for each path.

Table 6 Hypothesis testing outcomes & regression weight

Hypotheses				Estimate	S.E.	C.R.	P	Label
H1	INT	<---	PEOU	.387	.089	4.328	.000	
H2	INT	<---	PU	.267	.075	3.554	.000	
H3	INT	<---	SI	.097	.081	1.193	.233	

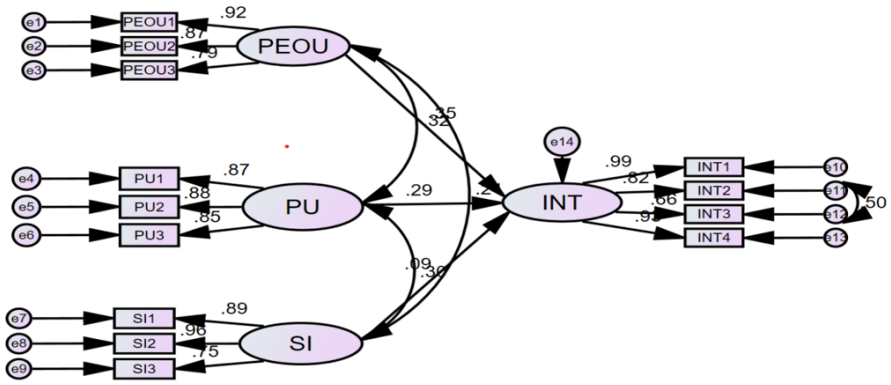

Figure 2 Structural Model

It has been found that PEOU and PU positively influence usage intention, which is in line with previous studies (Kuruppu et al., 2019; Martono et al., 2020; Kaitawarn, 2015; Abu-Assi et al., 2014; Shaw, 2014). It was confirmed after

empirical evidence that H1 (=0.387; p- value0.001), & H2 use (=0.267; p-value 0.001) has a direct positive association with the intention, which is similar to previous findings (Oliveira et al., 2016; Pham & Ho, 2015). In the context of this study, Hypothesis 3 (=0.097; p-value 0.001), has been rejected, which proposes that SI influences usage intention significantly. Similar studies in the literature, on the other hand, have confirmed a positive relationship between social influence and intention (Ting et al., 2016; Teng et al., 2018).

11. DISCUSSION & CONCLUSION

The current empirical study examines the impact of various constructs on user intentions toward app based banking. The findings of the EFA (Exploratory Factory Analysis) and the reliability analysis demonstrated that the indicators are proper and reliable. Furthermore, the results also confirmed the adequate validity of constructs. This study's TAM model contributes significantly to comprehending and explaining the consumer phenomenon toward app basd banking usage intention. The purpose of this study was to investigate the factors that affect users' decisions. The constructs examined in the study included "perceived usefulness, social influence, perceived ease of use, and intention to use" (Pham & Ho, 2015; Kuruppu et al., 2019; Phan & Bui, 2019; Oliveira et al., 2016; Teng et al., 2018). This study assumed a link among "perceived ease of use, social influence, perceived usefulness, and intention towards using" app based banking services, starting with the predictors of intention. The two most critical antecedents here are PEOU and PU. This study found that unlike other research, social influence did not impact users' inclination. Social influence was not found to be a significant predictor of users' intention to use app based banking services. So far as, perceived usefulness in the concerned study's findings indicate that when a prospective customer recognises the usefulness/value of the technology-enabled banking, he/ she will try to improve the efficiency of the work they intend to carry out (Davis, 1989). Second, this research explains that PEOU significantly influences intention toward using app based banking; again, in this regard, the user should exert less effort in order to accept the suggested technology enabled system will dramatically affect its usage intention as proposed by Suhaimi & Hassan, 2018; Abu-Assi et al., and 2014; Phan & Bui, 2019.

12. LIMITATIONS AND FUTURE PROSPECTS

There are some limitations to the current study. The participants in the present study are a small subset of the general population. A large and diverse sample may yield different results. In the future, researchers may investigate how demographics influence the recommendation of app based banking. The researcher may also compare a user's behaviour before and after adoption. In the same way impact of actual usage of app based banking can be evaluated. The demographic variable could also be tested as a moderator to know whether it influences usage intention. Similarly, upcoming studies may assess intention more thoroughly by including variables such as the constant use of app based banking services and its effect on user behaviour. Furthermore, the study recommends identifying negative factors that can lower user intention and satisfaction. This study did not use any negative factors such as psychological and social risk while using new technology for banking transactions.

CONFLICT OF INTERESTS

None.

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