

# Mobile Banking Adoption in the Millennial Customers: a Revised UTAUT Model



Merugu Pratima, G. N. P. V. Babu

**Abstract:** Purpose-The paper aims at exploring the factors affecting intention to adopt and use mobile banking service apps in the generation Y customers' by applying a revised unified theory of acceptance and use of technology (UTAUT) model.

Research Design/methodology-The proposed model was empirically tested using a well-structured questionnaire and was further analyzed using structural equation model (SEM).

Findings –The results of SEM suggest that performance expectancy, efforts expectancy, social influence, trust and reliability, security and facilitating conditions have a significant effect on shaping customers' attitude and intention to adopt and use mobile banking services.

Research limitations/implications –Limitations were found in the selected sample, the study was limited to respondents from a single selected city, and respondents from other cities were not included. In addition, results from this study may not be generalized to the whole population of millennials.

Practical implications –This research identifies the factors that affect the intention to adopt mobile banking among the Generation Z users in Visakhapatnam city. Banking institutions can use the findings to develop competitive marketing strategies and services not only to attract potential customer and but to retain existing users customer value

Originality/value –The outcome of this study will provide a better insight into the factors influencing intention and adoption of mobile banking service among users in a developing country in India, where the concept of mobile banking quickly gaining momentum.

**Keywords:** Mobile banking, UTAUT model, Generation Y consumers.

## I. INTRODUCTION

The Growth in the 4G spectrum, Smartphone market, and wireless communication has opened new frontiers of opportunities to customers' around the world with smarter and faster services network services. One of the most pioneering networks of distribution in the banking sector is the advent of mobile banking. Mobile banking allows the customer to carry out banking activities through the Internet

using mobile phones or web and computers. Mobile banking offers more mobility by providing customers access to their banking and financial services such as access to bank accounts, checking of balance, execute transactions and payments via a mobile device. However, in spite of the advancements in electronic banking, mobile banking comprises a very small portion of the whole banking transactions and its potential yet to realize. Therefore it is imperative to study the ways to sustain and further enhance mobile banking services, especially in India given its current status as one of the fastest growing economies embracing digitization and digital transformation.

It is against this backdrop, the study aims to examine how the proposed framework based on extended UTAUT model influences customers' intent to use mobile banking services and aims provide a more comprehensive framework by including Trust and Security dimension to explore and understand the acceptance and adoption of mobile banking among the millennial in Visakhapatnam city.

## II. CUSTOMER BEHAVIOUR

Attitudes are formed as a result of consumer's feelings, beliefs, and behavioural intentions. From a marketing perspective, attitude toward user acceptance of technology is defined as an individual's overall effective reaction such as liking, enjoyment, joy, and pleasure to use a technology or service.

Research on consumer Attitude and Behaviour shows that there are several factors that influence the customer's attitude towards Mobile banking usages such as demography, motivation and individual acceptance of new technology. The unified theory of acceptance and use of technology (UTAUT) aims to explain user intent and subsequent usage behaviour. The present study draws its selected constructs based on the UTAUT model while few variables namely trust and security which are unique to the online environment were also incorporated. The theory holds that key constructs namely performance expectancy, effort expectancy, and social influence, trust, security and facilitating conditions have an impact on customers' attitude and usage behaviour. The first five are direct determinants of customers' attitude while the sixth is the direct determinant of usage intention and behaviour. However, compared to the abundant research on trust in internet banking, trust in mobile banking service is only beginning to receive attention. For the study, two additional constructs such as trust and security were included to provide a more comprehensive depiction of the factors influencing consumer adoption and usage behaviour.

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### III. REVIEW OF LITERATURE

In the literature survey, a review of earlier studies is carried out in the following paragraphs. This review outlines a small number of focused studies with specific reference to the theme of the study

Yi-Shun Wang, et. al., (2003) [1] in their study explored the factors determining users' adoption of mobile banking services using the technology acceptance model (TAM). The findings revealed that factors namely computer self-efficacy, perceived ease of use, perceived usefulness, and perceived credibility significantly affect individuals who intend to use mobile banking services

Mirza M. D. Alam (2014) [2] in their study identified the factors affecting individuals decide to use mobile banking service using the unified theory of acceptance and use of technology model The study was based on responses gathered from 225 respondents. The study revealed that factors such as social influence, effort expectancy, performance expectancy, and perceived financial cost significantly influenced individual intention to adopt mobile banking services in Bangladesh.

Bhatiasevi (2016) [3] examined the extended framework of the UTAUT model on Mobile Banking adoption. The study showed that factors such as performance expectancy, effort expectancy, and social influence, perceived convenience, and perceived credibility have significant positive effects on the user's intentions in accepting and adopting Mobile Banking apps.

Juo Tzu Tseng, et. al., (2017) [4] examined the Influence of transaction security and information privacy on the intention to use mobile banking. The findings revealed that factors such as privacy empowerment are significant in influencing an individual's intent to adopt mobile banking.

Waranpong Boonsiritomachai and Krittipat Pitchayadejanant (2017) [5] explored the contributing factor affecting behavioural intention to adopt mobile banking. The findings revealed that the revised model had a good fit in the context of mobile banking adoption by generation Y. In addition, the hedonic motivation of mobile banking users was identified as the most important factor motivating customers to adopt mobile banking, whereas mobile banking system security had a negative relationship with hedonic motivation.

Ayoobkhan ALM. (2018) [6] in their study examined the factors affecting mobile banking adoption in Sri Lanka. The findings indicated that perceived usefulness, Perceived ease of use, cost and trust have a significant and positive impact on Mobile banking adoption.

### IV. STATEMENT OF THE PROBLEM

The advent of the internet and mobile technology has revolutionized the banking sector worldwide with the development of mobile banking apps. This has resulted in a paradigm shift of banking services, which become the focus of various studies in the past. However, there has been a literature gap in the customers' intention to accept and use mobile banking services in India. A review of the available literature on the topic sheds light on the earlier studies which focused on examining customer perception and attitude towards internet/online banking while limited research

focused on the recognition of the attitudinal and behavioural intention of the customer using Mobile banking services. Furthermore, research on the role of factors such as the reference group, trust, and security in influencing customer's attitudes towards mobile banking has gained little prominence over the years. The research paper fills the gap by exploring the key predictors of mobile banking acceptance among the customers. The study also identifies the problems faced by customers when using mobile banking applications. The research aims to develop a framework by integrating selective variables from the unified theory of acceptance and use of technology with new constructs to provide a more comprehensive model for examining customers' attitudes and intention to accept and use mobile banking service apps among the millennials in Visakhapatnam city.

### V. SIGNIFICANCE OF THE STUDY

The study aims to examine the behavioural intention of mobile banking and its subsequent adoption/usage among the millennials in Visakhapatnam city. Since trust in the bank's online services play an important role in influencing usage behaviour, the role of trust and security construct was integrated into the model.

### VI. RESEARCH OBJECTIVES

In this context, the research study is done with the following specific objectives:

- i. To explore the factors influencing customers' intention to use mobile banking services of select retail banks in Visakhapatnam city
- ii. To identify the problems in the usage of mobile banking apps by the customers
- iii. To offer certain recommendations to enhance customer adoption and effective usage of online banking apps.

### VII. RESEARCH HYPOTHESES

From the theoretical basis the following assumptions were built:

- H1 - Performance expectation influences the customer attitude towards mobile banking services
- H2 - Effort expectation influences the customer attitude towards mobile banking services
- H3 -Social factors influence the customer attitude towards mobile banking services
- H4 -Trust influence the customer and attitude towards mobile banking services
- H5.-Security influence the customer and attitude towards mobile banking services
- H6- Attitude influences customers' intention of adopting mobile banking vices
- H7- Facilitating conditions influences customers' intention to adopt mobile banking service
- H8 - Behavioural Intention influences adoption /usage of mobile banking service

**VIII. RESEARCH METHODOLOGY**

The study is exploratory and cross-sectional in nature and Convenience sampling was adopted. The sample comprised 200 mobile banking customers living in and around Visakhapatnam city.

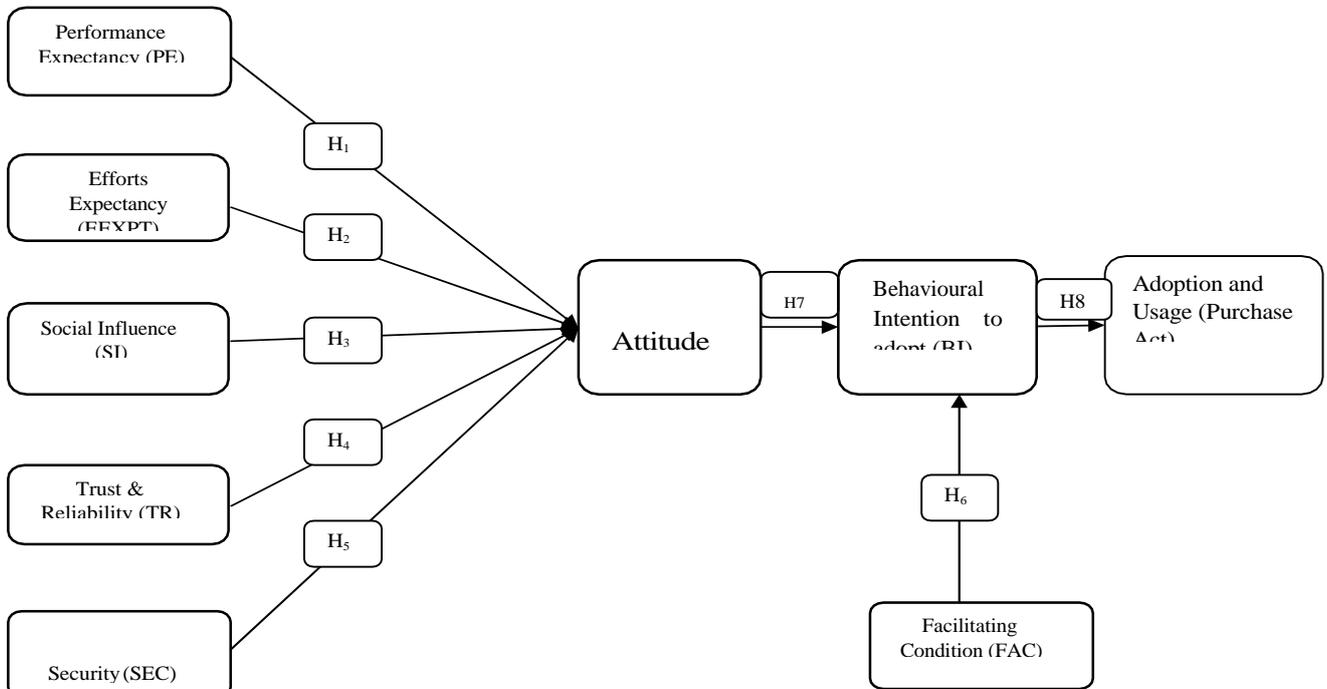
The questionnaire was the first pilot tested among a group of 30 respondents. A few minor changes were affected by the questionnaire before the final administration. The questionnaire was carefully designed to cover first the socio-demographic factors and second the attitude and behavioural intention of customers using 24 items related to six dimensions based on UTUTL model namely using a five-point Likert scale, ranging from 1 as “Strongly Disagree” and 5 as “Strongly Agree” Collected data were first structured into grouped frequency distributions and analyzed using SPSS. The study first examined the measurement model to test reliability and validity and followed by the Structural equation model (SEM) to test research hypotheses.

**PROPOSED FRAMEWORK FOR THE STUDY**

While the UTAUT model depicts the dimensions of performance expectation, effort expectation, social influence, and facilitating conditions, other variables such as trust & reliability and security were incorporated into the model to provide a more comprehensive insight into the adoption and usage behaviour of the Millennial in Visakhapatnam City. Fig.-1 presents the model with its constructs proposed in the present work. The definition of each construct is presented in Table -1

**Table-1: Constructs for the Proposed Model**

Construct	Description
Performance Expectancy (PE)	An individual’s perception that using mobile banking services will help and give an advantage in conducting banking activates.
Effort Expectancy (EEXPT)	It indicates that using mobile banking will require minimum efforts and that the system is easy to understand and use without any specific training or skills.
Social Influence (SI)	It refers to the role of reference groups such as family/ relatives/ friends in influencing the individual’s decision to use mobile banking services.
Trust and Reliability (TR)	Trust as an individual expectation that the service provided is trustworthy and reliable.
Security (SEC)	Security refers to the customer’s belief that the technologies used are reliable and trustworthy.
Facilitating Conditions (FAC)	Refers to the resources and support systems that facilitate the use of mobile banking applications
Attitude	Attitudes are an expression of inner feelings that reflect whether a person is favourably or unfavourably predisposed to some object.
Behavioural Intention (BI)	Refers to the measure of the strength of individuals intention to perform a specific action
Actual usage / Behaviour	It refers to the decision to adopt or use a particular system by the users.



**Figure - 1: Proposed Framework for Mobile Banking Adoption**

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## IX. RESULT AND DISCUSSION

Table- 2 reports on the respondent's socio-demographic characteristics like age, gender, education level, occupation and income level of the sample respondents. With reference to the gender distribution of respondents, the sample consists of 58 per cent male and 42 per cent female consumers. Majority of the respondents constituting around 50 per cent of the sample are below 30 years of age, with 32 per cent of the sample respondents belong to the group 21- 30 years and 17 per cent of the respondents are aged less than 25 years .The results also state that Majority of the respondents representing 41.5 per cent of the sample hold a bachelor's degree closely followed by 40 per cent of the sample holding a master's degree. As can be observed from Table-2 majority of the 32.5 per cent earn ₹ 25,001-50,000, while 24 per cent earns less than ₹ 25000 per month. The majority of the respondents constituting 30.5 per cent of the sample are employees working in private companies followed by 24.2 per cent working in government organizations, followed by 21.5 per cent of the sample represented by students.

**Table- 2: DEMOGRAPHIC PROFILE**

Particulars	Number of Respondents	Percentage
<b>Gender</b>		
Male	116	58.0
Female	84	42.0
Total	200	100
<b>Age</b>		
Less than 20	34	17.0
21 – 30	64	32.0
31 - 40	72	36.0
41 –50	19	9.5
Above 50	11	5.5
Total	200	100
<b>Education</b>		
SSC / Metric	2	1.0
Intermediate / ITI	17	8.5
Bachelor's degree	83	41.5
Masters' degree	80	40.0
Others	18	9.0
Total	200	100
<b>Income Level</b>		
Less than – ₹ 25000	48	24.0
₹ 25001 – ₹ 50000	65	32.5
₹ 50001 – ₹ 75000	40	20.0
₹ 75001 – ₹ 100000	18	9.0
₹ 100001 – ₹ 200000	20	10.0
More than ₹ 200000	9	4.5
Total	200	100
<b>Occupation</b>		
Employed in Private service	61	30.5
Employed in Government service	49	24.5
Business/ Self employed	7	3.5
Professional	31	15.5
Student	43	21.5
Others	9	4.5
Total	200	100

From Table-3, it can be observed that the majority of the respondents constituting 89 per cent of the sample prefer prepaid plans over post-paid which is 11 per cent of the sample. With regards to smartphone usage, it can be observed that majority of the respondents representing around 28 per cent of the sample have been using smartphones for 6-10 years, followed by 22.5 per cent of the respondents who have been using smartphones for the past 4-6 years, while 14 per cent of the respondents were using the smartphone for more than 10 years. With regards to the frequency of mobile banking usage, it can be observed that the majority of the respondents representing 30.5 per cent use Mobile.

**TABLE -3: CUSTOMER MOBILE BANKING SERVICE USAGE BEHAVIOUR**

Particulars	Number of Respondents	Percentage	
<b>Preferred Data plan</b>	Prepaid	178	89.0
	Post-paid	22	11.0
	Total	200	100.0
<b>Experience in using Smartphone</b>	1-2 years	21	10.5
	2-4 years	28	14.0
	4-6 years	51	25.5
	6-10 years	55	27.5
	More than 10 years	45	22.5
Total	200	100.0	
<b>Frequency of using mobile banking</b>	Daily	33	16.5
	Once in a week	48	24.0
	2-3 times a week	61	30.5
	Once in a month	33	16.5
	2-3 times a month	25	12.5
	Total	200	100.0
<b>Preferred mobile banking service</b>	Fund transfer	50	25%
	Utility bills payment	42	21%
	Statement inquiry	28	14%
	Paying college/ school fee	33	16.5%
	Paying for insurance/ credit card/ mutual funds	23	11.5%
	Request for cheque book	11	5.5%
	Paying for credit card	13	6.5%
Total	200	100	

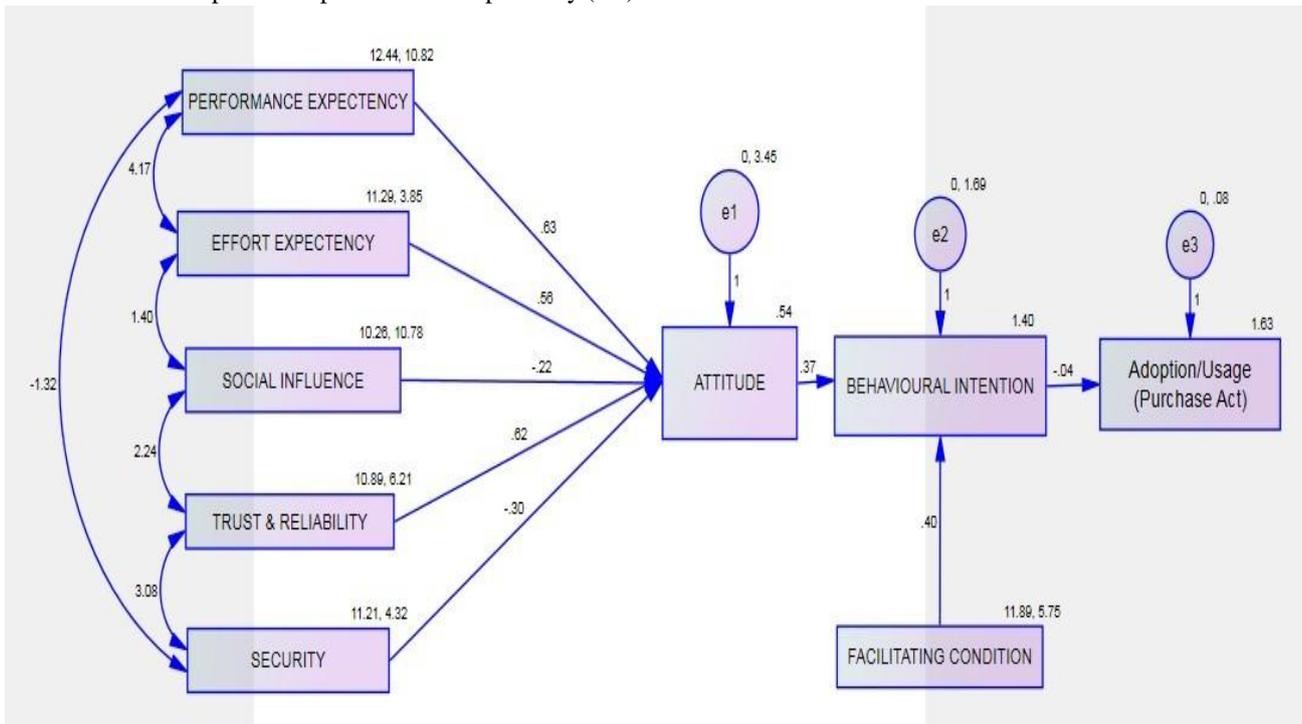
Banking app 2-3 times in a week, while 24 per cent of the respondents use Mobile banking app once in a week, followed by 16.5 per cent who indicated that they use Mobile banking app on a daily basis. It can be noted that majority of the respondents representing 25 per cent indicated that mobile banking service factor like funds transfer is the most frequently used service followed by utility payment service as indicated by 21 per cent of the respondents,

while 16.5 per cent of the respondents indicated that mobile banking apps were used for paying college or school fee.

**A. Discussion of Results in Relation to Research Hypotheses**

The SEM diagram below depicts the regression weights factors leading to the adoption and usage of mobile banking services among millennials in Visakhapatnam city as depicted in Figure -2. It also depicts the correlation value of each variable and its corresponding regression weights. All the hypothesized paths in the proposed model are significant as shown in table 4. The path from performance expectancy (PE)

in the prediction of Attitude is significant and the formulated hypothesis “(H1)-Performance expectation influences the customer attitude towards mobile banking services” is accepted. The hypothesized link between effort expectancy (EEXPT) and attitude is supported hence the formulated hypothesis “(H2) - Efforts expectancy influences the customer attitude towards mobile banking services” is accepted. Social influence (SI) to Attitude is supported and the formulated hypothesis “(H3) - Social factors influence the customer attitude towards mobile banking services” is accepted.



**SEM Analysis: Figure – 2: A Proposed theoretical model.**

**TABLE -4: AMOS output for model estimates**

	Paths		Estimate	S.E.	C.R.	P	
H1	PE	→	ATTITUDE	.631	.058	10.903	***
H2	EEXPT	→	ATTITUDE	.565	.097	5.836	***
H3	SI	→	ATTITUDE	-.218	.046	-4.721	***
H4	TR	→	ATTITUDE	.620	.074	8.427	***
H5	SEC	→	ATTITUDE	-.301	.087	-3.446	***
H6	ATTITUDE	→	BI	.373	.025	14.925	***
H7	FAC	→	BI	.398	.039	10.324	***
H8	INT	→	USAGE	-.044	.009	-4.775	***

Trust and Reliability (TR) have an impact on Attitude and the formulated hypothesis “(H4) - Trust & Reliability influences the customer attitude towards mobile banking services” is accepted. Impact of Security (SEC) on Attitude is supported and the formulated hypothesis “(H5) - Security influences the customer attitude towards mobile banking services” is accepted. The role of Facilitating conditions (FC) in the prediction of Behavioural Intention (BI) is significant and the hypothesized path “(H6) - Facilitating conditions influence the customer intention to adopt mobile banking services” is accepted.

The path from Attitude in the prediction of behavioural intention (BI) is significantly and the formulated hypothesis “(H7)-Attitude influences the customer intention to adopt mobile banking services” is accepted. The path from Behavioural Intention (BI) leading to actual adoption and usage of is significant and the formulated hypothesis “(H8) - Behavioural Intention influences adoption /Usage of mobile banking service” is accepted.

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Table -5 depicts the relation between the individual variables, As can be seen, that with p values less than 0.05, a significant correlation exists between Performance expectancy (PE) and Effort expectancy (EXPECT) constructs at 0.00 significance level. Efforts expectancy has an impact on social influence. With p values less than 0.05, it can be stated that significant correlation exists between social influence (SI) and trust & reliability (TR) there is a significant correlation between trust & reliability (TR) and Security (SEC) constructs and Performance Expectancy (PE) has an impact on Security (SEC).

**TABLE -5: COVARIANCE'S -RELATION BETWEEN THE INDIVIDUAL VARIABLES**

PATHS			Estimate	S.E.	C.R.	P	Label
PE	<-->	EXPEC T	4.166	.526	7.912	***	par_2
SI	<-->	EXPEC T	1.402	.346	4.047	***	par_3
SI	<-->	TR	2.244	.479	4.680	***	par_4
TR	<-->	SEC	3.078	.407	7.557	***	par_5
PE	<-->	SEC	-1.317	.308	-4.279	***	par_6

As per the proposed mobile banking adoption framework in the study all the six variables Performance Expectation, Efforts Expectancy, Social Influence, Trust and Reliability, and Security have an impact on customers attitude towards mobile banking usage. The study also establishes that facilitating conditions influence customer's intention to use mobile banking. The SEM outcomes establish that attitude influences mobile banking service adoption and usage among the millennials in Visakhapatnam city. Therefore the proposed model is successful in providing a comprehensive depiction of factors influencing customers' attitudes and intentions to adopt mobile banking services among Millennials in Visakhapatnam City.

**TABLE -6 TOTAL EFFECTS**

	TR	PE	SI	SEC	Expe ct	FAC	Attitu de	INT
Attitude	.620	.631	-.218	-.301	.565	.000	.000	.000
INT	.231	.235	-.081	-.112	.211	.398	.373	.000
Usage	-.010	-.010	.004	.005	-.009	-.018	-.017	-.044

### X. CONCLUSION AND SCOPE FOR FUTURE RESEARCH

The present study provides an insight into the influential factors driving mobile banking adoption. The research model is designed by incorporating variables from the UTAUT Model with variables such as trust & reliability and security components into the proposed framework. The findings of the study support the effect of the proposed revision of the UTAUT Model for the incorporation of trust and security perceptions, on mobile banking usage behaviour of customers in Visakhapatnam City.

The study demonstrated that all the six variables namely performance expectancy, effort expectancy; social influence, trust & reliability, security and facilitating conditions are significant in affecting customer's decision to adopt and use mobile banking services. The study provides practical

insights that can assist the banks, financial institutions, and mobile operators focusing on the factors that can enhance mobile banking acceptance by potential customers. The SEM results supported the view that attitude influences mobile banking service adoption and usage among the millennials in Visakhapatnam city. Therefore the revised UTAUT Model is successful in providing a comprehensive depiction of factors shaping customers' attitudes and intentions to adopt mobile banking service among Millennials in Visakhapatnam City. The study is limited to respondents from Visakhapatnam city and does not include respondents from other cities or states. For a more comprehensive outlook on the customer using mobile banking apps, another category of the customer such as generation Z can also be included in the study. In order to gain a better insight on factors driving mobile banking adoption, future studies can include a large sample size

Because replication is required for scientific progress, papers submitted for publication must provide sufficient information to allow readers to perform similar experiments or calculations and use the reported results. Although not everything need be disclosed, a paper must contain new, useable, and fully described information. For example, a specimen's chemical composition need not be reported if the main purpose of a paper is to introduce a new measurement technique. Authors should expect to be challenged by reviewers if the results are not supported by adequate data and critical details.

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