

Youths' Perception towards Mobile Driven Financial Inclusion in Gwalior City



Sapana Gupta, K.S. Thakur

Abstract: *The need for mobile phones has become inevitable in current world scenario. Mobile phones not only add to the convenience and security but also signify the status symbol. Mobile phones are considered as an opportunity for most of the organization to deliver their services. Banking industry is also facilitating various services via mobile phones. Mobile phones are playing an important role in financial inclusion since large numbers are still unbanked or financially excluded. Mobile banking is center of attraction to the youths. This study attempts to study the perception of the youths towards mobile driven financial inclusion in Gwalior city and to access the factors influencing the use of mobile in financial services in Gwalior City. The study covers the respondents of age group 18-40 years. The study framed the TAM model using the four factor i) Perceived Ease of Use, ii) Perceived Usage, iii) Perceived Usefulness and iv) Actual Usage. The study derived the TAM model sequencing influence perceived ease of use to perceived usage, perceived usage to perceived usefulness and perceived usefulness to actual usage. Although study contains certain limitation still has some implications providing recommendation for the improvement and modification of the mobile banking services and make them more friendly and secure.*

Keywords: *Actual Usage, Financial Inclusion, Mobile Banking, Perceived Ease of Use, Perceived Usage, Perceived Usefulness, TAM Model.*

I. INTRODUCTION

Financial revolution is undergoing in the whole world. Every day a new technology is being developed due to which the financial institutions are redefining their services. Heavy competition has been observed among banks and financial institution in relation to the use of latest technology. Banks and financial institutions are working hard to increase the accessibility of banking services to the mass population. In this race starting from ATMs and Internet Banking now they have approached mobile phones as a tool for easy and convenient banking. Today's life has become much better with the use of mobile phones. Mobile phone becoming smarter has been like icing on the cake in daily life keeping day to day lifestyle on a fast track.

Introduction of Smart phones have opened new vistas for user interface which included touch screens, images, sound, graphics, GPS tracker etc and user can do many more tasks like email, watch movies, listen music, information storage and social media networking, further can perform financial transaction through smart phones which we had not even imagined. The everyday personal life as well as professional life has become much better due to the several features of smart phones these days. Usages of smart phones and internet in India have increased tremendously over last decade. TRAI (2008) stipulated that the wireless market contained 233.62 million subscribers as on 31st December 2007 and wireless data services including Internet subscribers were counted as 57.83 million. According to TRAI (2016) total wireless subscribers stand to be 1,127.37 million at the end of 2016 which is 11.52% change over 2015 which stood at 1,010.89 million in 2015. As per TRAI (2016) the total wireless internet subscribers were 370 million which increased to 400.62 million till date 31st March 2017 (TRAI, 2017) According to TRAI (2017) total wireless subscribers stand to be 1,170.18 million till date 31 March 2017 which was a 3.8% increase over the previous quarter. With this tremendous increase in smart phone users and wireless internet users nowadays, banks and financial institution whether they are public or private are offering mobile based financial services through "mobile-apps". In a speech, R. Gandhi, Deputy Governor of RBI, said that with growing use of the Internet on the mobile phone, this medium is becoming a natural channel of choice for both customers as well as service providers (TheHinduBusinessLine, 2011).

"Mobile based financial services are the services provided by banks or other financial institutions to allow its customers to conduct financial transactions remotely using a mobile device such as a smart phone or tablet" (Wikipedia). Mobile driven financial services are called any time any where services due to its 24*7 availability except some restriction by certain financial institutions. Mobile driven financial inclusion can simply be understood as mobile banking. RBI has defined mobile banking transaction in its master circular as banking transaction which is performed using mobile phones by bank customers. According to the Master Circular, RBI has permitted the banks to offer mobile banking services like Mobile Banking Application, SMS, USSD only after the permission of Department of Payment & Settlement System, RBI has been obtained and the mobile banking service should be provided irrespective to mobile network (RBI 2014). As per RBI guidelines, only those banks which are licensed,

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supervised and having physical presence in India are permitted to offer mobile banking services and only banks who have implemented core banking solutions are permitted to provide mobile banking services. There are 292 banks permitted to provide mobile banking services in India as on date 11th July, 2017.

In current scenario the smart phone adoption to youth is extremely high. Youths are considered extremely technology-savvy and mobile phones are highly being considered as an essential communication tool among the youths. Moreover today's young generation is connecting the mobile phones with their status symbol. The youths are sagacious learner able to master new skills quickly, hence they are quick to learn the various features of mobile phone and various services of mobile banking. Mobile banking has benefited users by providing wide range of banking services at high comfort level. They can check their account balances, account details and get bank statement any where any time also pay bill and transfer funds to other accounts on their finger tips sitting at their homes or offices. Information and Communication Technology has furnished very strong support towards financial inclusion. Since the mobile users are increasing day by day, among different technology based financial services people are highly trending towards Mobile based financial inclusion these days. The banks and financial institutions are scratching their heads all the time to add unique features to their banking services to gain competitive advantage over other banks. So, the banks and financial institutions are focusing more on the mobile banking services to motivate the mobile user to use mobile banking services and also bring the financially excluded section into the vicinity of financial inclusion.

II. LITERATURE REVIEW

Chuchuen, C. (2016) The major objective of this research was to identify the factor influencing the adoption behaviour of M-banking and to determine the relationship among these factors and M- banking behavior basically in Thailand. The study concluded four major factors influencing the M- banking adoption i.e. i)good attitude subjective norms and high interest, ii)ease of use and usefulness of M-Banking, iii) trust in M- Banking and iv) satisfaction level from M-banking.

Borg, A. (2016) in this article the author stated "almost 2 billion people, 40 % the world's adult population, lack one of the most basic amenities of modern life, a bank account". The UN, World Bank and World Economic Forum jointly took a commitment for Universal Financial Access by 2020. A heavy growth in bank accounts and number of mobile subscription had been seen worldwide between 2011 and 2015. The author has forwarded 3 lessons from mobile banking pioneers i) strong and supportive political leadership, ii) bring all the stakeholders i.e. banks, telecom companies, financial supervisor and telecom regulators together for a common goal and iii)significant role of international community like Bill & Melinda Gates Foundation played a significant role in success of M-PESA.

Deshwal, P. (2015) examined the positive and negative factor that influence the adoption of electronic payment service i.e. mobile banking. The researcher has discussed economic, regulatory and demographic challenges in adoption of mobile banking. The positive impact

enumerated as cost reduction, control over frauds, reminder facility, easy in availing mobile services and various security features. On the other hand negative impact enumerated as security threats like scam called "smashing", compatibility issues, extra cost of data and mobile banking application charged by some financial institution. The researcher has concluded a point that the benefit of mobile banking should not linger around the rich, educated and urban areas but should reach to all potential users to the remotest location of the country for which efforts are to be made by the govt., telecom service providers, mobile device manufacturers, banks and financial institution.

Reddy, D.N.V.K. & Reddy, M. S. (2015) examine the perception level, usage level and satisfaction level of customers towards Electronic banking services in Khammam district. The study showed that people are aware of E-Banking services but very less are using it due to lack of education or knowledge to use it and people have showed positive perception and satisfactory level towards E-banking.

Rolfe, A. (2015) said that according to UK's Official of National Statistics half of the adults and three fourth of the age group 25-34 yrs now managing their money online. In Latin America there were 18 million mobile banking users which had tendency to increase to 140 million by 2015.

Chavda, M.B. & Solanki, A (2014) discussed the major factors influencing the intention of Mobile banking adoption and held a comparative study between the mobile banking and traditional banking services. Further examine the satisfaction level of mobile banking customers with different demographic variables which revealed that satisfaction level is dependent on age and occupation of the customer. Maximum number of customer of mobile banking fall between age group 18-40, income group 15000- 30000 and were found independent of security features.

Govender, I. & Sihlali, W. (2014) used TAM model to ascertain the factors influencing the use of mobile banking by the IT Students. The study showed that IT students have positive attitude towards M-banking and are likely to adopt it continuously because it suits their lifestyle.

FernandezdeLis, S., et al. (2014) the working paper is related to the potential of mobile banking in Colombia. The author has mentioned that future progress in mobile banking is possible only if the product remain cheaper and simpler and further should be geographically easily accessible which can inspire the user to use it.

Mago, S. (2014) measured the impact of mobile banking on financial inclusion in Zimbabwe. Major population of Zimbabwe resides in rural area among which only 5% have access to bank reason behind being inaccessibility, higher cost and inconvenience. It is indicated M-banking can be a major indicator for solution to financial inclusion since the study reveals that people were ready to use mobile banking if it is available at cheaper cost and ensures security as well.

Nayak, N., Nath, V. & Goel, N. (2014) conducted the research to understand the factors which influence the mobile banking adoption behavior by Indian Consumers which showed the need of spreading awareness among people via pamphlet, advertisements, demo fares etc as necessary.

Soufi, A. & Ali, H. (2014) this research work is based on Technology Adoption Model (TAM) which considered 4 perceptions they are perceived cost, perceived usefulness, perceived risk and perceived ease of use. There perceived ease of use and perceived usefulness showed a positive impact whereas perceived risk and perceived cost had no influence over the use of M-Banking.

Jain, Y. (2013) focused on two major objectives one the adoption of mobile banking by customer and the other the influencing factors over the adoption and usage of mobile banking in Southern Rajasthan.

The result revealed that people were dissatisfied with the lack of proper guidance and complications associated with the use of M-banking. People are found highly conscious with the risk factor.

Malik, G. & Gulati, K. (2013) investigated the perceptions of banks and customers towards mobile banking in the survey period February and March in year 2012 in Northern Capital Region.

The study was carried out with a sample size of 300 bank customers who were continuously using mobile banking for last six months and included 2 public sector banks "State Bank of India" and "Punjab National Bank". The result showed different perception level among the bank customers. The factor analysis conducted in the study revealed 5 major factor i.e. security, cost, accuracy, convenience and control and accessibility as the major influencing factor over the use of SMS/Mobile banking.

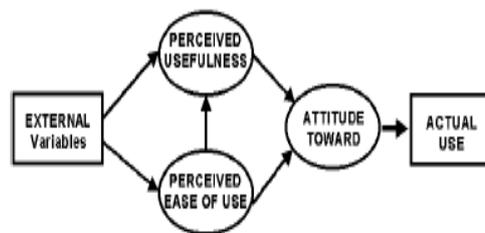
Bamoriya, P.S. & Singh, P. (2012) focused on barriers to mobile banking adoption and considered security concern as the foremost barrier in mobile banking service adoption. The researcher also revealed that service preference is limited to gaining information rather than financial transaction.

Klein, M., Mayer, C. (2011) in this working paper the author has stated that the launch of M-PESA in Kenya in year 2007 was a success which signed up about 50% and more number of adults in mobile banking in last 4 years. The three significance of mobile banking are stipulated in the working paper i) makes available financial services to unbanked locations, ii) considerable lift up in regulatory and competition policy issues and iii) provides fundamental conceptual insights into the nature of these services.

Singh, P. & Bamoriya, P.S. (2011) the researcher has examined the undergoing issue among banks, mobile handsets and telecom operators and disclosed that mobile handset operability resulted as major issue in mobile banking. Security and privacy, standardization, were major issue with many customers.

III. THEORETICAL RESEARCH FRAMEWORK

For adoption and uses of new technology TAM model is being used since 1980s (Lule, Omvansa & Waema, 2012) Technology Acceptance Model (TAM) Proposed by Fred Davis 1986.



Source: Davis 1986, p. 24

Fig. 1. TAM Model Proposed by Fred Davis

Based on the above theoretical research frame work presented in fig.1 the pre determined model of this research has added perceived usage along with perceived ease of use and perceived usefulness of mobile banking towards the actual use of mobile banking.

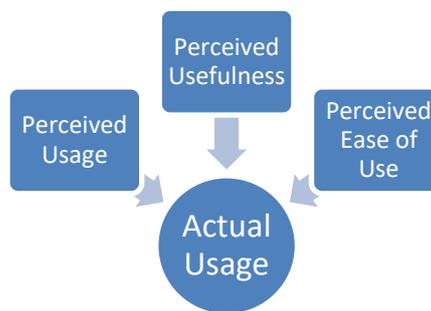


Fig. 2. Expected TAM Model of the Study

IV. OBJECTIVES OF THE STUDY

- To access the factors influencing the use of mobile in financial services in Gwalior City.
- To analyse the perception level of youths towards mobile driven financial inclusion in Gwalior City.

V. RESEARCH DESIGN

This study is causal in nature. This study is based on primary as well as secondary data. The target population is of the age group 18-40 yrs. All the Youths belonging to the age of 18-40 in Gwalior city were considered as the population. Individual respondent were considered as sample element and a sample size of 200 was taken on the basis of purposive sampling. The primary data was collected through a standardized questionnaire distributed to 200 people belonging to age group 18-40 years. The secondary data is collected from various newspaper and magazine, Journals, RBI reports, research papers, and several websites. Primary Data collection is done through questionnaire.

VI. RESEARCH METHODOLOGY

The research is causal in nature and factor analysis and SEM analysis is performed to test the hypothesis. Factor analysis is done in two steps i) Exploratory Factor analysis ii) confirmatory Factor Analysis. SEM analysis is done to test the hypothesis and model is derived according to the path suggested by SEM analysis.

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VII. Data Analysis and Interpretation

A. Demographic Profile

Total 198 respondent's responses are taken for analysis where 2 are rejected for missing data. Here among the total 198 respondents 130 are male and 68 are female. In age group 62 are of age group 18-25 yrs, 51 are of age group 25-30 yrs, 52 are of age group 30-35 yrs and 33 are of the age group 35-40 yrs. 11 respondents are 12th, 138 are graduate and 49 are post graduate where 107 are students, 38 are businessman and 53 are private job holders.

B. Reliability

Reliability test is done to measure the internal consistency of the measuring scale introduced by Lee Cornbach in 1951. This was normally seen as ≥ 0.70 (five instances) or > 0.70 (three instances) although one article more vaguely referred to "the acceptable values of 0.7 or 0.6" (Griethuijsen et al., 2014). The cronbach's alpha value obtained is 0.914 for 17 numbers of items which means the scale is reliable.

C. Factor Analysis

Factor analysis is done in two steps i) Exploratory Factor Analysis, ii) Confirmatory Factor Analysis.

D. Exploratory Factor Analysis (EFA)

For measuring the sample adequacy and suitability of data KMO and Bartlett's Test is done. KMO value above 0.6-0.7 is considered to be adequate for further Exploratory Factor Analysis (EFA) (Netemeyer, Bearden, et.al.2003). Bartlett's Test of Sphericity provides that the significant value less than 0.05 are acceptable for EFA (Hair, Anderson et al. 1995a; Tabachnick and Fidell 2001).

Table-I: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.879
Bartlett's Test of Sphericity	Approx. Chi-Square	2283.983
	df	136
	Sig.	.000

Source: Computed Data

Factor extraction is done through the default principal component analysis (PCA) method. Factor retention is done by Varimax rotation. In table 1 the KMO value obtained is 0.879 and hence is acceptable and shows that the sample is adequate and also the Bartlett's test significant level is 0.000 which means data is suitable for further analysis.

Table-II: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.244	42.611	42.611	7.244	42.611	42.611

2	2.707	15.922	58.532	2.707	15.922	58.532
3	1.346	7.918	66.450	1.346	7.918	66.450
4	1.008	5.928	72.378	1.008	5.928	72.378

Source: Computed Data

In table 2 the total variance explained is 72.378 percent and total 4 factors are extracted. The four factors are named as i) Perceived Ease of Use ii) Perceived Usage, iii) Perceived Usefulness and iv) Actual Usage.

Table-III: Factor Naming, Coding and Reliability

Components	Factor Code	Factor Loading	Factor Name	Cronbach's Alpha
Easy_to_use	PESU1	.772	Factor 1: Perceived Ease of Use	0.908
Physical_services	PESU2	.808		
Easy_for_bank_transaction	PESU3	.760		
Physical_services	PESU4	.794		
Anywhere_anytime	PESU5	.772		
Savetime	PESU6	.756		
Savecost	PESU7	.716		
Usage_of_Mobile_Phone	PU1	.576	Factor 2: Perceived Usages	0.830
BANK_Service_on_Mobilephone	PU2	.792		
Usage_Mobileph_Banking_services	PU3	.793		
Expreince_of_using_mobile_banking_services	PU4	.766		
Use_as_mbanking_statussymbol	AU1	.840	Factor3: Actual Usage	0.877
Use_as_satisfied_with_mbanking_services	AU2	.841		
Use_as_mbanking_as_per_requirement	AU3	.834		

Useful_dailylife	PUF	1	.776	Factor 4: Perceiv ed Usefuln ess	0.904
Help_manage_cash_transaction	PUF	2	.877		
Usefull_for_cashless_transaction	PUF	3	.856		

Source: Computed Data

In table 3 all the variables are arranged under the construct they belong according to their factor loading and are named and coded also Cronbach's Alpha is calculated for individual factors.

E. Confirmatory Factor Analysis

Before performing SEM analysis it is necessary to measure the validity. The validity is measured in two ways that is convergent validity and discriminant validity.

Where Composite reliability should be above 0.70 and an extracted variance above 0.50 is suggested by Hair et al. (1998). MSV should be less than AVE.

Table-IV: Validity and Reliability

	Composite Reliability	Average Variance Explained	Maximum Shared Variance
PUF	0.909	0.769	0.401
PESU	0.907	0.587	0.438
PU	0.844	0.582	0.438
AU	0.877	0.705	0.401

Source: Computed Data

Hence all the criteria are fulfilled as shown in table 4 so the measurement scale is valid where CR > 0.70, AVE > 0.50 and MSV < AVE.

F. Common Method Biasness

Harman's single factor test is done to find if any kind of external biasness exist in data. The percentage of variance of single factor under principal axis factoring with no rotation is calculated. The variance explained should be less than 60 percent for the data being free form any kind of biasness.

Table-V: Harman's Single Factor Total Variance Explained

Fact or	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Tota	% of	Cumulati	Tota	% of	Cumulati
	1	Varian	ve %	1	Varian	ve %
		ce			ce	
1	7.24	42.611	42.611	6.65	39.161	39.161
	4			7		

Source: Computed Data

According to Harman's Single Factor test the variance explained by the single factor is 39.161 percent as derived in table 5 which is less than 60 percent Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003)

G. Confirmatory Factor Analysis Model

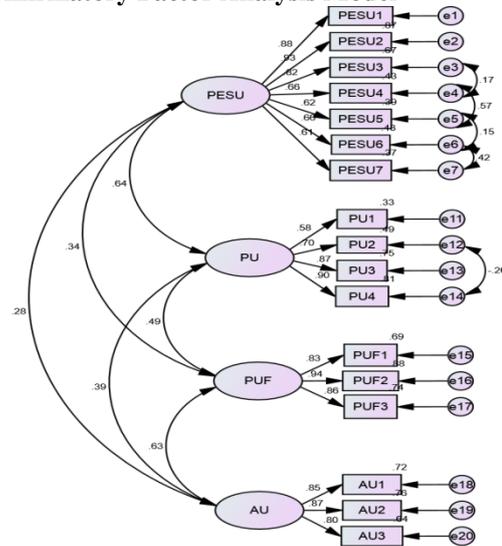


Fig. 3. CFA Measurement Model Fit

Table-VI: Indices for Model Fit

Index	Acceptance Level	Results	Remarks
CMIN	CMIN	1.410	Accepted
GFI	GFI > 0.90	0.914	Accepted
RMSEA	RMSEA < 0.08	0.046	Accepted
AGFI	AGFI > 0.90	0.879	Considerable
CFI	CFI > 0.90	0.980	Accepted
NFI	NFI > 0.90	0.936	Accepted
TLI	TLL > 0.90	0.975	Accepted
PClose	P > 0.05	0.655	Accepted
RMR	RMR < 0.05	0.046	Accepted

Source: Computed Data

Here in table 6 all the indices are under the acceptance level, hence the model is perfect fit and perceived ease of use, perceived usage, perceived usefulness and actual usage are the factors influencing the use of mobile banking in Gwalior city.

H. Diagnosed Factor Path Analysis

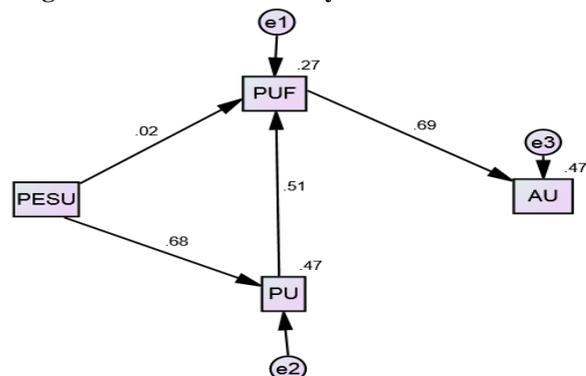


Fig. 4. Diagnosed Factor Path Diagram

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Sewall Wright in 1930 introduced path analysis which deals with causal analysis. Figure 4 represent the diagnosed factor path diagram and the output shows that it is a fit model having CMIN 1.455, GFI 0.993, AGFI 0.964, CFI 0.997, NFI 0.991, TLI 0.991, RMR 0.015, RMSEA 0.048 and PClose 0.389 .The path model is a good fit. Hence it is used in hypothesis testing.

Table-VII: .Regression Weights

	Estimate	S.E.	C.R.	P	Label
PU <--- PESU	.469	.036	13.164	***	Not Accepted
PUF <--- PESU	.015	.061	.254	.799	Accepted
PUF <--- PU	.541	.089	6.108	***	Not Accepted
AU <--- PUF	.710	.053	13.301	***	Not Accepted

Source: Computed Data

I. Testing of Hypothesis

Considering the p value from the table 7, the results of the hypothesis testing against p value is indicated below:

H₀₁: Perceived Usage of Mobile Banking is not significantly influenced by Perceived Ease of Use of Mobile Banking. **Not Accepted**

H₀₂: Perceived usefulness of Mobile banking is not significantly influenced by Perceived Ease of Use of Mobile Banking. **Accepted**

H₀₃: Perceived Usefulness of Mobile Banking is not significantly influenced by Perceived Usage of Mobile Banking. **Not Accepted**

H₀₄: Actual Usage of Mobile Banking is not significantly influenced by Perceived Usefulness of Mobile Banking. **Not Accepted**

J. Derived TAM Model

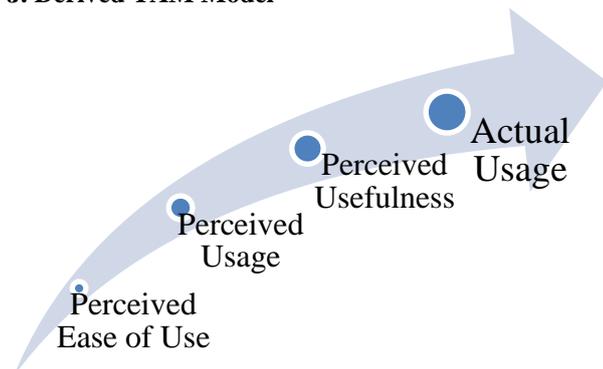


Fig. 5. Derived TAM Model

VIII. CONCLUSION AND IMPLICATIONS

Mobile banking is center of attraction to youths these days. Technology adoption is very quick in the youths and hence mobile banking is highly adopted by the youths these days. This study reveals the factor influencing the youth's perception towards the actual usage of mobile banking. A TAM model is extended to Mobile Services having the four

constructs i) Perceived Ease of Use (PESU) , ii) Perceived Usage (PU), iii) Perceived Usefulness (PUF) and iv) Actual Usage (AU). From data analysis it is exposed from figure 5 that Perceived Ease of Use has influence over Perceived Usage, Perceived Usage has influence over Perceived Usefulness and Perceived Usefulness has influence over Actual Usage. The study concluded that mobile banking is an effective channel of delivering financial services.

So, banks always need to improve the quality of the mobile banking services since it is gaining popularity day by day and there are many instances for the improvement and modification of mobile banking services. It is even necessary to make mobile banking services more friendly and secure. It is necessary to develop positive attitude in the excluded section towards mobile banking, educate them regarding mobile banking services and also inform them with new emerging services. Also it is important to develop innovative services of mobile banking in future to take over the traditional financial system.

Along with the importance of the study, it is incumbent with certain limitations also. The study is restricted to Gwalior city only and is based on small sample size consist the respondents of age group 18-40 years only. Further in future this research can be conducted based on all the age group of respondents and also some other kind of ICT based banking service can be taken into consideration like Online Banking, Mobile Wallet or Electronic Fund Transfer etc. and also a large sample size may be taken for the analysis.

REFERENCES

1. Ali, A. A. (2014). Customer's Perception of M-Banking Adoption in Kingdom of Bahrain: An Empirical Assessment of an Extended TAM Model. *International Journal of Managing Information Technology(IJMIT)* , 6 (1).
2. Borg, A. (n.d.). Why Mobile Banking is Key to Financial Inclusion. *Global Financial System Initiative, World Economic Forum* .
3. Chavda, M. B. (2014). An Empirical Study on Adoption of the Mobile Banking Services in Ahmedabad City. *Eduved Global Management Research* , 1 (1), 31-37.
4. Chitokwindo, S. M. (2014). The Impact of Mobile Banking on Financial Inclusion In Zimbabwe: A Case for Masvingo Province. *Meditarranean Journal of Social Sciences* , 5 (9).
5. Chuchuen, C. (2016). The Perception of Mobile Banking Adoption: The Study of Behavioral, Security and Trust in Thailand. *International Journal of Social Science and Humanity* , 6 (7).
6. D.N.V. Krishna Reddy, M. (2015). A Study on Customer's Perception and Satisfaction Towards Electronic Banking in Khammam District. *IOSR Journal of Business and Management* , 17 (12), 20-27.
7. Deshwal, P. (2015). A Study of Mobile Banking in India. *International Journal of Advanced Research in IT and Engineering* , 5 (12).
8. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* , 13 (3): 319–340, doi:10.2307/249008, JSTOR 249008
9. Garima Malik, K. G. (2013). An Exploratory Study on Adoption and Use of SMS/ Mobile Banking in India with Special Reference to Public Sector Banks. *Pacific Business Review International* , 5 (11).

10. Griethuijsen, R. A. L. F., Eijck, M. W., Haste, H., Brok, P. J., Skinner, N. C., Mansour, N., et al. (2014). Global patterns in students' views of science and interest in science. *Research in Science Education*, 45(4), 581–603. doi: [10.1007/s11165-014-9438-6](https://doi.org/10.1007/s11165-014-9438-6). [CrossRefGoogle Scholar](#)
11. Hair J, e. a. *Multivariate Data Analysis*. New Jersey: Prentice- Hall Inc , 4th edition.
12. Hair Jr., J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
13. Jain, Y. (2013). Mobile Banking: A Study on Adoption & Challenges in Southern Rajasthan, India. *International Journal of Innovative Research and Development* , 2 (4).
14. Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003) Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88, 879-903.
15. Mayer, M. K. (2011). Mobile Banking and Financial Inclusion. The World Bank Financial and Private Sector Development Public-Private Infrastructre Advisory Facility .
16. Netemeyer, R. e. (2003). *Scaling Procedures: Issues and Applications* . SAGE .
17. Nitin Nayak, V. N. (2014). A Study of Adoption Behaviour of Mobile Banking Services By Indian Consumers. *International Journal of Research in Engineering & Technology* , 2 (3), 209-222.
18. Rolfe, A. (2015). Youth Attitude to Banking and Online Banking Services. *PAYment Industry Intelligence Payments Cards & Mobile* .
19. Santiago Fernandez de Lis, e. a. (2014). Financial Inclusion and the role of Mobile Banking in Colombia: Developments and Potential. *BBVA Research* .
20. Singh, P. S. (2011). Issues & Challenges in Mobile Banking in India: A Customers' Perspective. *Research Journal of Finance and Accounting* , 2 (2).
21. Singh, P. S. (2012). Mobile Banking In India: Barriers In Adoption and Service Preferences. *Integral Review A Journal of Management* , 5 (1), 1-7.
22. Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham, MA: Allyn & Bacon.
23. The Hindu Business Line (2016, December 11). Mobile banking usage already well over last FY's mark: RBI. *The Hindu Business Line* . URL Retrieved:
24. <http://www.thehindubusinessline.com/money-and-banking/mobile-banking-usage-already-well-over-last-fys-mark-rbi/article9422495.ece>

- <https://www.financialservicesperspectives.com/2016/07/banking-smarts-for-financial-transactions-via-smartphone-technology/>
- <http://www.investor.fisglobal.com/phoenix.zhtml?c=180304&p=irol-newsArticle&ID=2282398>
- <http://www.importantindia.com/24281/importance-of-smartphones-in-our-daily-life/>
- <https://www.allclearid.com/personal/2012/06/mobile-banking-vs-online-banking/>
- <https://main.traigov.in/>

AUTHORS PROFILE



Sapana Gupta, with 3 years of intensive learning experience in the field of management and commerce, management information system. Pursuing Ph.D. (Commerce) from Jiwaji University, Gwalior. Completed Post-Graduation Degree Masters' in Business Studies from Tribhuvan University, Kathmandu, Nepal. More than two years teaching experience in the field of management and commerce and

3 years research experience.

Websites

- https://en.wikipedia.org/wiki/Mobile_banking
- <http://egov.eletsonline.com/2016/11/madhya-pradesh-on-the-road-to-become-cashless/>
- <http://www.trffcmmedia.com/topics/why-are-smartphones-so-important-in-daily-life/>
- <https://www.surveymonkey.com/r/NZLW8GJ>