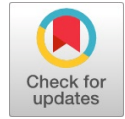# Empirical Analysis of Demographic Factors Affecting Intention to use Mobile Wallet

S.Vasantha, P. Sarika

Abstract: *Purpose: Development of digitalisation in banking services brought changes in the minds of customers to adopt different e -channels of banking products and services. Adoption of mobile wallet may be influenced by the demographic variables of customers.The study aims to understand the influence of demographic variables on the factors of intention to use mobile wallets*

Methodology/ Approach

Primary and Secondary data have been utilized for analysis. The sample size of 200 respondents are chosen on method of judgement sampling

Novelty

Mobile wallet is one of the robust methods of making payments through online which is tremendously increased gain importance in the digital era among millennials generation group. Limited research has been conducted in the area of mobile wallet adoption. The proposed research work adds new dimension to the existing research work that the role of demographic variables on the usage of mobile wallet

Practical Implications

The outcomes of the current study would help the government for formulating polices and taking strategic decisions. Further the research would add value addition to mobile wallet service providers to devise strategies that will foster the mobile wallets' adoption by the end users.

Findings

It has been found that with respect to genders, the factor personal innovativeness makes significant difference on the intent to use mobile wallet and the other factors such as perceived enjoyment and subjective norms do not differ significantly. Age has a significant difference on the mobile wallet usage intention.

Keywords: Demographic variables, Mobile wallet, Intention to use, perceived enjoyment Personal Innovativeness, Subjective Norms.

I. INTRODUCTION

In present digital era the growth of smart phone users and increased usage of internet facilities influenced the adoption of mobile wallet. The Government revolutionary steps on demonetization made the public to shift from cash transaction to cashless transaction

The research conducted by research firm RNCOS reveals that the present Indian mobile wallet market share is nearly Rs.350 crore .It is estimated that by the end of the year 2019 the mobile wallet market share is Rs.1210 crore. Considering

the present situation in India and digital India initiatives of Government definitely push the adoption of mobile wallet in the coming years According to RBI 's provisional data Digital transactions in December 2017 cross over the 1 Billion Mark, moving a new peak in terms of volume since the government's exercise on demonetization in November 2016. Transactions through the Unified Payment Interface (UPI) also touched a new high, clocking 145.5 million transactions in December 2017.The research report of Google and the Boston Consulting Group in September 2016, states that by the year 2020 digital payments industry will raise 10 times which will contribute to 15 % of GDP

Based on TAM model and its extension most of the researchers concluded that, the factors determine the usage of online banking are perceived use, perceived ease of use, perceived security, perceived speed, Personal Innovativeness, Subjective Norms and perceived enjoyment.

1.1 Personal Innovativeness in Technology

Personal Innovativeness in Technology states that an individual uses the technology at the stage of the implementation of new technology itself and thereby the individual proves to be an initial stage adopter. Thus it can be concluded that preliminary stage adopters are the individuals with higher technical skills and capability. Therefore, it can be stated that the technology will be relaxed for the preliminary stage adopters of technology when compared with the individuals who are late adopters.

1.2 Perceived Enjoyment

Perceived Enjoyment is the extent to which the user perceives the experience of utilization of a particular system to be enjoyable. This does not take into consideration the consequences of performance related to the system.The enjoyment on adoption of technology is established through consumers' existing experience. The enjoyment of the information system is as relevant to its usability and utility.

1.3 Social Influence

Social influence is the perceived influence of important others who inspire consumers in the usage of the technology in the transaction. The Relevant Others can be the families, couples and organizations. Social influence is the perception of relevant people who enforce on adoption. Previous research explained that the voice of important others causes personal intention to use a new technology.

II. OBJECTIVE OF STUDY

The study aims to analyze the effect of demographic variables, Gender and Age, on the factors that motivate the users' intent of mobile wallet adoption.

III. LITERATURE REVIEW

Demographic and socio- economic variables have an effect on the mobile wallet adoption. Jham (2005) stated that younger users are more motivated to use online transaction when compared to older consumers. The research conducted by Zeithaml and Gilly (1987), Parasuraman et.al.(1 988)). Shows that the younger age group is more likely adopt e –banking channels than older people and it is also observed that married customers are more likely to use e banking than unmarried. Furnell (2004) stated that customers are more concerned about the confidentiality about their accounts and are worried about the safety measures undertaken by the banks regarding the transactions performed by them. Most of the researchers used modified version of TAM model to ascertain the factors influencing the usage of mobile wallet. Earlier empirical research concluded there is a positive correlation between the critical factors, perceived ease of use and perceived usefulness. They play a crucial role in the intent to adopt mobile banking.(Agarwal et.al. (2000), Johnson and Marakas (2000)). It is observed that chances of using mobile banking by men are more than women [Laukkanen & Pasanen 2008; Koenig-Lewis 2010], and men are more worried about cost than women[Cruz et al. 2010].

3.1 Review Mapping

3.1 Review Mapping

Authors & Year	Journals Details	Theories	Sampling & Countries	Main Findings
1. Khushbu Madan & Rajan Yadev (June2016)	Journal of Indian Business Research Vol. 8 No. 3, 2016 pp. 227-244 DOI 10.1108/JIBR-10-2015-0112 www.emeraldinsight.com/1755-4195.htm	Perceived Regulatory Support & Promotional Benefits Constructs	210 respondents obtained via convenience sampling in India	Performance Expectancy, Social Influence, Facilitating Conditions, Perceived Risk, Perceived Value, Promotional benefits are Main Factors Encouraging Consumers to Adopt the Mobile Wallets.
2. Donald L. Amoroso and Rémy Magnier-Watanabe (December 2011)	Journal of Theoretical and Applied Electronic Commerce Research ISSN 0718–1876 Electronic Version VOL 7 / ISSUE 1 / APRIL 2012 / 94-110 DOI: 10.4067/S0718-18762012000100008	TAM	Suica in Japan.	Adoption Factors are perceived ease of use, perceived usefulness, facilitating conditions, attitude toward using, perceived value, perceived security and privacy, social influence, trust, behavioral intention to use, perceived risk, and attractiveness of alternatives Connecting to mobile Payments
3. Ting-Yu Li, Chien-Ta Bruce Ho	The Asian Conference on Psychology and Behavioral Sciences 2015 Official Conference Proceedings iafor. The International Academic Forum www.iafor.org	UTAUT Model	300 respondents with using online questionnaires to collect data & Taiwan	Subjective norm is the most influential factor, such as trust, social influencing, performance expectation, effort expectation, and convenience have a significant relationship with consumer decisions to adopt m-commerce.
4. PROF. J. RAMOLAPRE MALATHA (2016)	International Journal Of Marketing, Financial Services & Management Research _ISSN 2277-3622 Vol.5 (2), FEBRUARY (2016), pp. 29-39 Online available at indianresearchjournals.com	Unified Theory of Acceptance and Use of Technology (UTAUT)	Review based on the Articles acceptance models in India	Determinants of user behavioural intention and usage for Acceptance of the technology consumer intention.
5. Shuiqing Yang, Yaobin Lu, Sumeet Gupta, Yuzhi Cao, Rui Zhang(2012)	Computers in Human Behavior 28 (2012) 129–142	Theory of reasoned action (TRA), Theory of planned behavior (TPB)	Sample size 483 potential adopters and 156 current users in China.	pre-adoption and postadoption stages from a holistic perspective including behavioral beliefs, social influences, and personal traits mobile payment services adoption
6. Vidisha Gunesh Ramlugun & Harsha Issuree (2014)	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT Vol 3 Issue 1	Technology Acceptance Model (TAM)	questionnaire and an online survey platform were used for primary data collection in Mauritius	perceived usefulness, perceived ease of use, perceived credibility, perceived self-efficacy, had a positive relationship on behavioural intention to adopt mobile banking services

7. Hanudin Amina, Mohd Rizal Abdul Hamida, Suddin Ladaa and Zuraidah Anisb (2008)	International Journal of Business and Society, Vol.9 No.2, 2008, 69-86	Technology acceptance model (TAM)	Used for primary data collection only in Malaysia	Perceived credibility, perceived usefulness and perceived ease of use behavioral intention to adopt mobile banking among its customers.
8. Julio Puschel and Jose Afonso Mazzon, Jose Mauro C. Hernandez (2010)	International Journal of Bank Marketing DOI: 10.1108/026523210110649 08	Innovations Diffusion Theory (IDT) and Decomposed Theory of Planned Behavior (DTPB)	666 respondents surveyed on online questionnaire in developed cities in Brazil	Relative advantages, visibility, compatibility, and perceived easy-of-use significantly affects attitude, and attitudes, subjective norm, and perceived behavioral control significantly affects intention.
9. Dasgupta, S., R. Paul, and S. Fuloria(2011)	Romanian Journal of Marketing, Vol. 3, No. 1: 6-28, 2011	Technology Adoption Model (TAM)	325 usable questionnaires collected from students in India	Perceived usefulness, easy-of-use, image, value, self-efficacy, and credibility significantly affect intentions toward mobile banking adoption and usage.
10. Christer Carlsson, Joanna Carlsson, Kaarina Hyvönen, Jussi Puhakainen, Pirkko Walden (2006)	39th Hawaii International Conference on System Sciences	Unified Theory of Acceptance and Use of Technology (UTAUT)	Questionnaire 300 Finnish consumers residing on the islands.	Performance expectancy, Effort expectancy, Social influence, Facilitating conditions, behavioural intention, Anxiety, Attitude toward using mobile device/service find some explanations for the adoption of mobile devices/services
11. Ikram Dastan & Cem Gürler (2016)	Emerging Markets Journal - Volume 6 No 1 (2016)	ISSN 2158-8708 (online)	DOI 10.5195/emaj.2016.95	http://emaj.pitt.edu		technology acceptance model (TAM)	225 individuals were surveyed online in	Perceived Reputation, Environmental Risk, Trust, Perceived Usefulness, Perceived Ease of Use, Mobility, Attitude, Intention to Use positively affect the adoption of Mobile Payment Systems (MPS)

IV. METHODOLOGY/APPROACH

Analysis is performed by empirically testing on primary data collected from 200 respondents through questionnaire survey. The respondents are selected based on judgement sampling. The variables selected for the present study are based on depth literature review and empirically tested few models. The secondary data is based on depth literature survey, RBI websites & Government reports. Based on previous empirical research findings, the dominant factors affecting mobile wallet usage are namely Personal Innovativeness, Subjective Norms and perceived enjoyment .

These factors are considered to observe the association among different demographic variables and the intent to use mobile wallet.
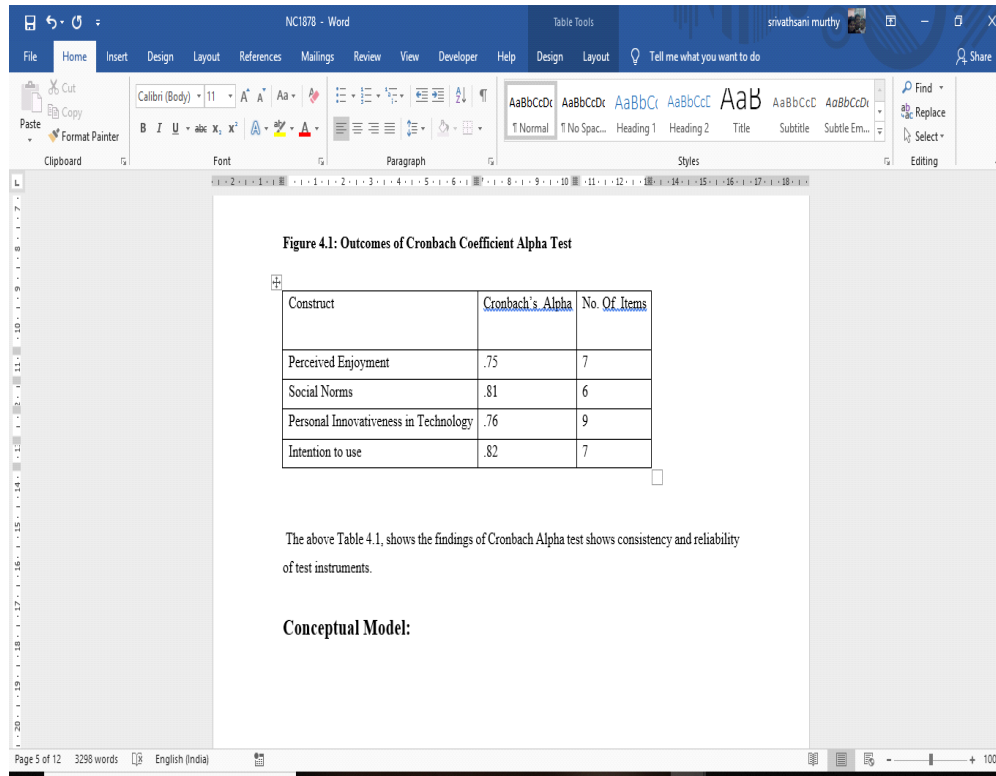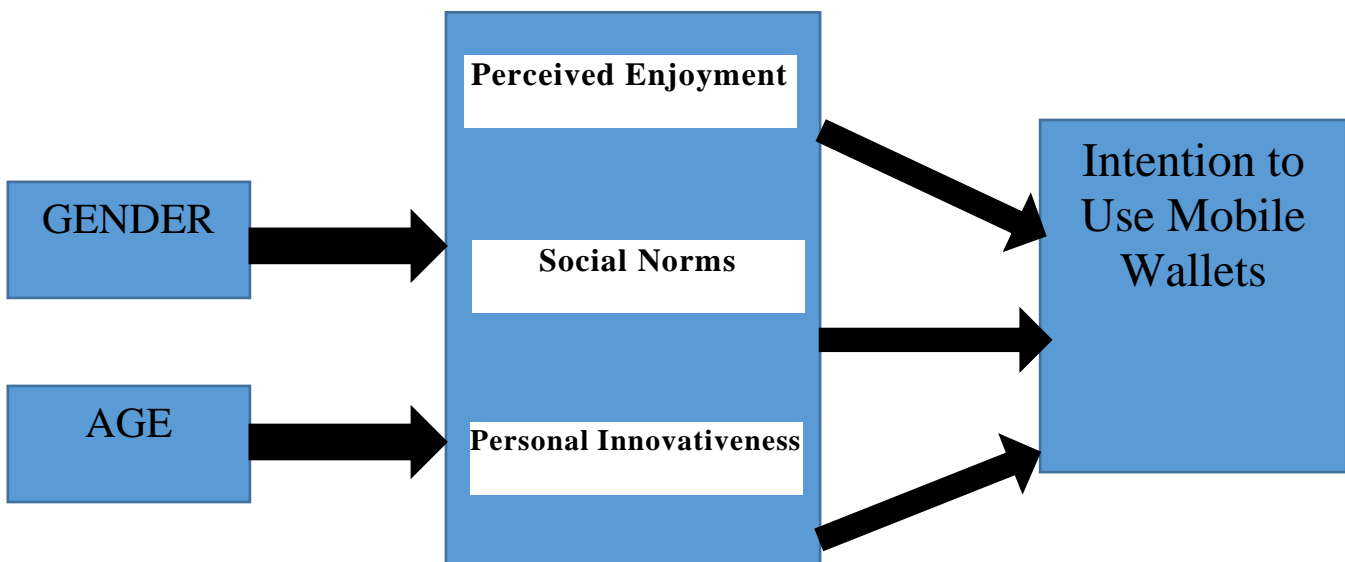

Figure 4.1: Outcomes of Cronbach Coefficient Alpha Test

The above Figure 4.1, shows the findings of Cronbach Alpha test shows consistency and reliability of test instruments.

Conceptual Model:

771

V. RESULTS & DISCUSSION

Null Hypothesis: There is no significant difference between Male & Female with respect to factors of intention to use mobile wallet

Figure:5. 1 t test to Analysis the significant difference between Male & Female taking the factors influencing the usage of mobile wallet into account

| Factors | Gender | | | | t value | P value |
| | Male | | Female | | | |
	Mean	S.D	Mean	S.D		
Personal Innovativeness	3.68	0.66	3.79	0.69	1.987	.047
Subjective Norms	3.69	0.72	3.75	0.82	1.00	.320
Perceived Enjoyment	3.75	0.72	3.79	0.78	0.62	.535

From the above figure, it is clear that the there is no significant difference exist between male and female with respect to factors of Subjective Norms and Perceived Enjoyment on the intent to use mobile wallet. As the P value is greater than 0.05, the null hypothesis is accepted. So, it is inferred that there is no significant difference between Male & Female taking the factors of Subjective Norms and Perceived Enjoyment into consideration.

With respect to personal innovativeness the P value is less than 0.05, the null hypothesis is not accepted. So, there is a significant difference between the two genders when the factor of Personal Innovativeness is considered.

Null Hypothesis (H_{01}): There is no significant difference among Age groups in years with respect to factors of intention to use Mobile wallet.

Table5.1. ANOVA significant difference among Age groups in years taking the factors influencing the usage of mobile wallet into account

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
subjective norms	Between Groups	37.563	4	9.391	17.687	.000
	Within Groups	336.623	634	.531		
	Total	374.186	638			
personal innovativeness	Between Groups	32.328	4	8.082	19.904	.000
	Within Groups	257.434	634	.406		
	Total	289.762	638			
perceived enjoyment	Between Groups	28.415	4	7.104	13.632	.000
	Within Groups	330.374	634	.521		
	Total	358.789	638			

* denotes significant at 5% level

As p<0.01, the null hypothesis is rejected at 5 percent level of significance. So, there is significant difference between age groups when the factors influencing intention to use mobile wallet namely Subjective Norms, Personal innovativeness and Perceived Enjoyment are considered.

Null Hypothesis (H02): There is no significant difference among Age groups and factors influencing intention to use mobile wallet.

Figure 5.3 - Multiple comparison – Age VS factors of Mobile wallet Adaptation

Multiple Comparisons					
LSD					
Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.
subjective norms	**20-29 years**	30-39 yrs	-.03967	.07429	.594
		40-49 yrs	-.05379	.09305	.563
		50-59 yrs	-.47491*	.08933	.000
		60and above	.50489*	.10804	.000
	30-39 years	20-29 yrs	.03967	.07429	.594
		40-49 yrs	-.01411	.09236	.879
		50-59 yrs	-.43524*	.08860	.000
		60and above	.54457*	.10744	.000
	40-49 years	20-29 yrs	.05379	.09305	.563
		30-39 yrs	.01411	.09236	.879
		50-59 yrs	-.42112*	.10483	.000
		60and above	.55868*	.12118	.000
	50-59 years	20-29 yrs	.47491*	.08933	.000
		30-39 yrs	.43524*	.08860	.000
		40-49 yrs	.42112*	.10483	.000
		60and above	.97981*	.11834	.000
	60and above	20-29 yrs	-.50489*	.10804	.000
		30-39 yrs	-.54457*	.10744	.000
		40-49 yrs	-.55868*	.12118	.000
		50-59 yrs	-.97981*	.11834	.000
personal innovativeness	20-29 years	30-39 yrs	.01306	.06497	.841
		40-49 yrs	-.16986*	.08137	.037
		50-59 yrs	-.59639*	.07812	.000
		60and above	.08915	.09448	.346
	30-39 years	20-29 yrs	-.01306	.06497	.841
		40-49 yrs	-.18292*	.08077	.024
		50-59 yrs	-.60944*	.07748	.000
		60and above	.07609	.09396	.418
	40-49 years	20-29 yrs	.16986*	.08137	.037

		30-39 yrs	.18292*	.08077	.024
		50-59 yrs	-.42652*	.09167	.000
		60and above	.25901*	.10597	.015
	50-59 years	20-29 yrs	.59639*	.07812	.000
		30-39 yrs	.60944*	.07748	.000
		40-49 yrs	.42652*	.09167	.000
		60and above	.68553*	.10349	.000
	60and above	20-29 yrs	-.08915	.09448	.346
		30-39 yrs	-.07609	.09396	.418
		40-49 yrs	-.25901*	.10597	.015
		50-59 yrs	-.68553*	.10349	.000
perceived enjoyment	20-29 years	30-39 yrs	.03615	.07360	.624
		40-49 yrs	-.23365*	.09219	.011
		50-59 yrs	-.45676*	.08849	.000
		60and above	.28191*	.10704	.009
	30-39 years	20-29 yrs	-.03615	.07360	.624
		40-49 yrs	-.26980*	.09150	.003
		50-59 yrs	-.49290*	.08777	.000
		60and above	.24577*	.10644	.021
	40-49 years	20-29 yrs	.23365*	.09219	.011
		30-39 yrs	.26980*	.09150	.003
		50-59 yrs	-.22311*	.10385	.032
		60and above	.51557*	.12005	.000
	50-59 years	20-29 yrs	.45676*	.08849	.000
		30-39 yrs	.49290*	.08777	.000
		40-49 yrs	.22311*	.10385	.032
		60and above	.73867*	.11724	.000
	60and above	20-29 yrs	-.28191*	.10704	.009
		30-39 yrs	-.24577*	.10644	.021
		40-49 yrs	-.51557*	.12005	.000
		50-59 yrs	-.73867*	.11724	.000
*. The mean difference is significant at the 0.05 level.					

To analyse the significance difference among different age groups considering the factors of intention to use mobile wallet, LSD was done. The multiple comparison analysis gives clear idea about the age group which behaves homogenous in adoption of mobile wallet.

With respect to subjective norms the age groups 50-59 and 60 & above are significantly different from other age groups 20-29, 30-39 and 40-49

With respect to personal innovativeness the age groups 50-59 and 60 & above are significantly different from other age groups 20-29, 30-39 and 40-49.

With respect to perceived enjoyment the age group 20-29 is significantly different from other age groups 40-49, 50-59 & 60 and above but there is no significant difference with 30-39

As p< 0.05, the age group 30-39 is significantly different from other age groups 40-49, 50-59 & 60 and above but there is no significant difference with 20-29 age group

As p< 0.05, the age groups 40-49 is significantly different with other age groups

As p< 0.05, the null hypothesis is not accepted at 5% level with regard to the age group 50-59. Hence there is significant difference with other groups

As p< 0.05, the null hypothesis is not accepted at 5% level with regard to the age group 60 and above. Hence there is significant difference with other groups, Howcroft et.al. (2002) They observed that that younger consumers are giving more importance to convenience and time saving when they are adopting banking over the internet compared to the older consumers. The current generation of consumers are not giving importance to face-to-face contact when compare to older consumers. The empirical research finding shows that end users feel banking via internet economical and it will not burn their pockets due to unnecessary expenses (Karjaluoto et.al. (2002)). The educational qualification of the respondents does not have any impact on the utilization of banking via telephone or internet (Barnes and Corbitt (2003), Brown et.a1.(2003)).

Chian-Son Yu(2012) adopted Unified Theory of Acceptance and Use of Technology (UTAUT) to explore factors which influence people's adoption of mobile banking. He found out societal influence, perceived financial cost, performance expectancy and perceived credibility has impact on intention to adopt mobile banking. The behaviour of individual towards intention to adopt is influenced by their facilitating conditions. The research concluded that there is a gender significantly moderate between performance expectancy and perceived financial cost. Age moderate between facilitating conditions and perceived self-efficacy on actual adoption behaviour.

VI. CONCLUSION

The researcher examined the critical factors which influence mobile wallets' adoption among end users and the effect of demographic profile of the respondents such as age and gender. It was concluded that age and gender have significant difference on the intent to adopt mobile wallet. The behaviour of age group 50-59 years and above 60 years are homogenous when compared to other age groups in adoption of mobile wallets. The Government can come forward to reach the above said age groups through awareness campaign, create user friendly mobile apps to encourage the usage of mobile wallets. The initiatives of government on digitalization and demonetization would motivate the consumers to adopt mobile wallet for purchasing of goods & services. The exponential growth of internet usage & mobile penetration would help the people to move from cash to digital India in the coming years.

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