

# An Empirical Study on Factors Affecting Consumer Adoption Of Mobile Payments In Rural Area

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## Abstract

Rural areas, home to nearly 70% of the country's population. Rural people & their allied activities have significant impact on the economic progress of the country. Before the demonetisation in India, mobile payments are just only fluke in rural people. Following the much talked about 'demonetization' move by PM Narendra Modi-led government, the story of a cashless economy and digital transactions were pushed hard in the Indian Economy recently. Growth in smartphone and mobile internet users in India further fuelled the mobile payments usage in the country. Due to all such social and political developments/trends, the rate of usage Mobile payments has increased multi-fold in the recent years.

Despite the fact that the social and political trends are being very positive in rural segments for embracing the digital payments, still there are considerable challenges too in succeeding the paradigm shift. Still rural people are facing with poor infrastructure, facility and knowledge related to mobile payments. This study tries to focus on various factors affecting the adoption of mobile payments in rural areas.

**Key Words:** Rural Consumers, Mobile payments

## Introduction

In a country like India where 90% of its population rely on conventional payment system i.e. physical cash and check rather than electronic payment, it is not so simple to consider and decide on the basis of cost and benefit of using mobile payment. Majority of people are still reluctant to deal with Electronic payment because of security and privacy concern. Mobile technologies have not only become widespread rapidly, but they currently also have the advantage of reaching the customers for firms. Mobile technologies have lots of advantages against other technologies, such as interacting with anybody in anywhere, being in use individualistically, customized information and services, and getting quick answers from users.

It was observed that most of the rural people have not a common knowledge about Internet- its operation and usage. About

Electronic payment, they hardly know operation of ATM. People are quite far from all the ICT developments taking place in banking. Even in metro cities 60% people rely on traditional payment instruments. Even for large value payments, like sale and purchase of land and building, people prefer physical cash rather than receiving any other form of payment.

## Service provided by Banks in Rural Area

- Now days, Private Banks are trying hard to prove their presence in rural area. Banks like ICICI, HDFC and Yes bank are providing high interest rates and zero balance facilities in rural areas.
- RBI announced and asked various banks to open branches in various untapped rural centres over next coming years.
- Banks are opening Mobile van based branch to cater the need of untapped rural villages.
- Due to RBI mandates of 25% of new branches in rural areas, banks are taking advantage of cheaper real estate rents in villages.

## Challenges of Digital Payment in Rural India

In November 8th 2016 central government has taken important step to demonetization of Rs.500 and Rs.1000 currency. But in the rural India where cash was the kind, the options of digital payments were exercised by very few retail outlets and also the consumers were wary of using such trends. After November 8th 2016, some changes took place in Indian economy; it was process of digital payments system. significant developments has taken place in the digital payments and many mobile payments companies, POS service providers, e-commerce players, and government initiatives has been focusing on improving the digital payment solutions. But some of the importance challenges of digital payments system in rural people are as follows:

1. Most of the Indian people buying goods and services only for cash based transaction habits in rural area; they need not go digital payments system either through using debit card or credit card or ETGS or any other. As for decades India has been

- a cash based economy.
2. Awareness programme would be conducted in rural area about using the digital payments like Smartphone based transactions, feature phone based transactions, usage of credit or debit cards at POS solutions etc are some of the key important challenges.
  3. The other important issue of digital payments is the lack of technology used in the rural people and also reach of technology to various locations. Though, it is being sounded that every corner of India shall have ICT services in place, still in many of the locations where the installations were complete, services are not available for the customers.
  4. People are using ATM only for cash withdrawals. They are not comfortable for online transactions.
  5. There is less or limited availability of point of sale terminals.
  6. Due to lower literacy level in rural people and majority parts of the rural area, it is difficult for banks to create awareness about plastic money.
  7. Since India is heavily relied on currency economy. The cash circulation among the people is around 13% of total GDP of India.
  8. In customer point of view, lack of awareness of the customer, still the challenge of gaining the trust of customers is one of the key challenges facing the mobile wallets, digital transaction service providers like banks, fin-tech companies etc.
  9. Other point of customer view, the cost of transactions that are levied over the customer is also a major concern. For example, over every debit card transaction, some retailers are charging the transaction cost from customers and it is additional burden. To ensure that debit and credit cards are used prevalently, such transaction charges have to be evaded.

### Literature Review

Due to digitalization, now a day, mobile technologies are emerging as a payment system in India. Heavy amount of research is starting in the area of MPS. Mobile payments are defined as a system which uses various mobile devices to start, activate, and/or for confirmation of any type of payment (Karnouskos, 2004).

The factors like; ease of use, usefulness, cost (vander Heijden, 2002), mobility, perceived trust, perceived expressiveness (Zmijewka, 2004), relative advantages compatibility, network externalities, complexity and costs are affecting adoption of mobile payment services.

According to survey carried out by Schierz (2010) of more than 1000 peoples for identification of factors affecting adoption of mobile payment system, following result has been derived.

- Perceived compatibility, perceived usefulness and perceived ease of use have the highest effect on adoption of mobile payment system.
- Other factors are:
  - ⊙ Innovativeness
  - ⊙ Mobile payment knowledge
  - ⊙ Mobility
  - ⊙ Reach ability
  - ⊙ Compatibility
  - ⊙ Convenience
  - ⊙ Perceived usefulness
  - ⊙ Perceived ease of use

Various behavioural beliefs, social influence and personal traits have linear and significant influence on the adoption of mobile payment systems. (Yang, 2012). Perceived reputation and environmental risk are negatively correlated with each other (Srivastava, 2010). Trust, expressiveness and perceived ease of use also affect the adoption of digital wallets as a payment system (Padmavathy). According to Rai (2012), safety and security of payment are more influential factors in adoption of mobile payments. Authentications, confidentiality, integrity of data have positive effect in gaining trust of people in digital payments methods.

Demographics also play vital role in adoption of any upcoming technology. In India consumers younger than 35 years of age are nearly double to download a mobile app in their mobile phone in comparison to more than 50 years of age. Above half of those consumers, use digital wallets only once in a week, most commonly for availing various promotional offers such as coupons, discounts etc. Concept of performance expectancy acts as an important factor that influences the adoption of mobile payment solutions (Alkhunaizan & Love, 2012).

Poustchi (2003) found that data confidentiality is the most important criterion for adoption of mobile payment (Amoroso & Watanbe, 2012). The relative advantage which digital wallets offer is convenience, security and affordability over other payment methods specially while transferring money (Wamyu, 2014). Time convenience is also important factor in adoption of digital wallets as well as intention to use (Cliqet, 2014).

**Research Objectives**

- To understand how rural consumers perceive mobile payment service
- To study factors that influence consumers in adoption of mobile wallet.

**Research Methodology**

**• Research Approach & Nature of Data**

For gathering primary data, survey approach was used

**• Research Instrument**

For this research questionnaire was used. The questionnaire was designed using Likert Scale.

**• Sample unit** : Rural respondents

**• Sample Size** : Total 150 rural respondents of Gandhinagar District

**• Sample Procedure** : Non probability Convenience Sampling

**Data Interpretation and Analysis**

**Smart Phone Possession**

Figure 1, 2, 3 & 4: Demographic information

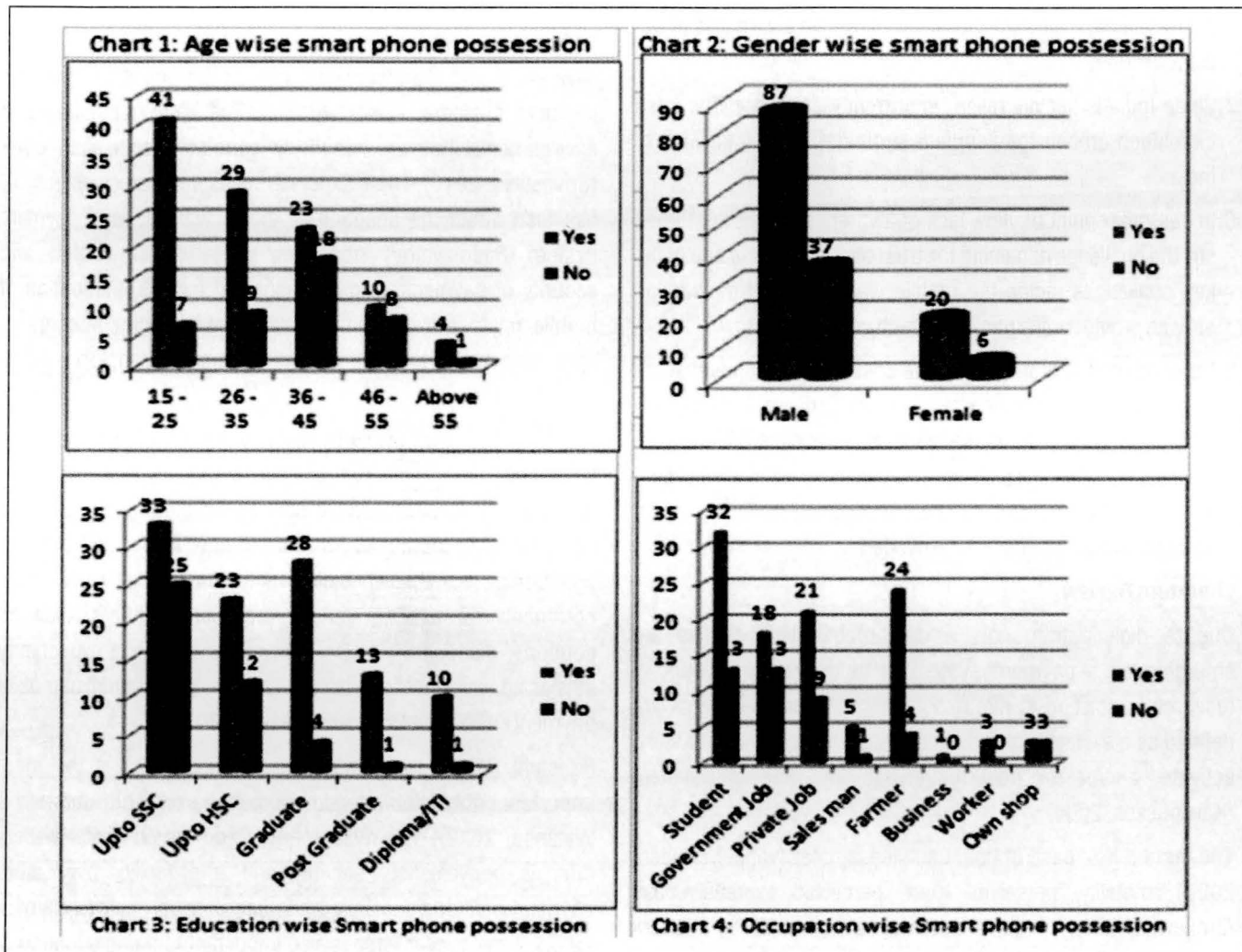
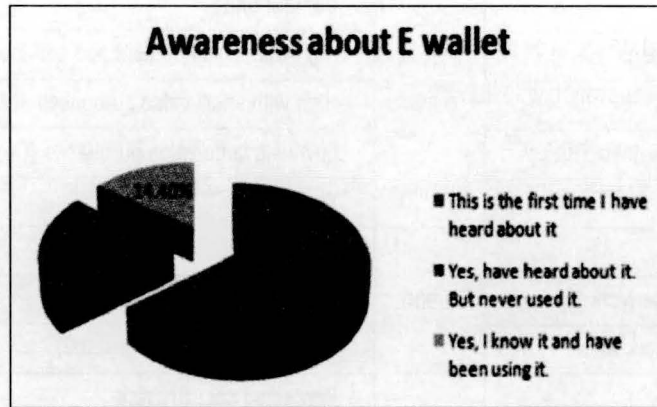


Figure 1, 2, 3 & 4 shows age, gender, education and occupation wise how rural people possess the smart phone. Majority of the respondents from age group 15 – 25, 26 -35 and 36 – 45 use the smart phone. Male respondents are using smart phone more than female respondents. The smart phone usage is more in students compare to others.

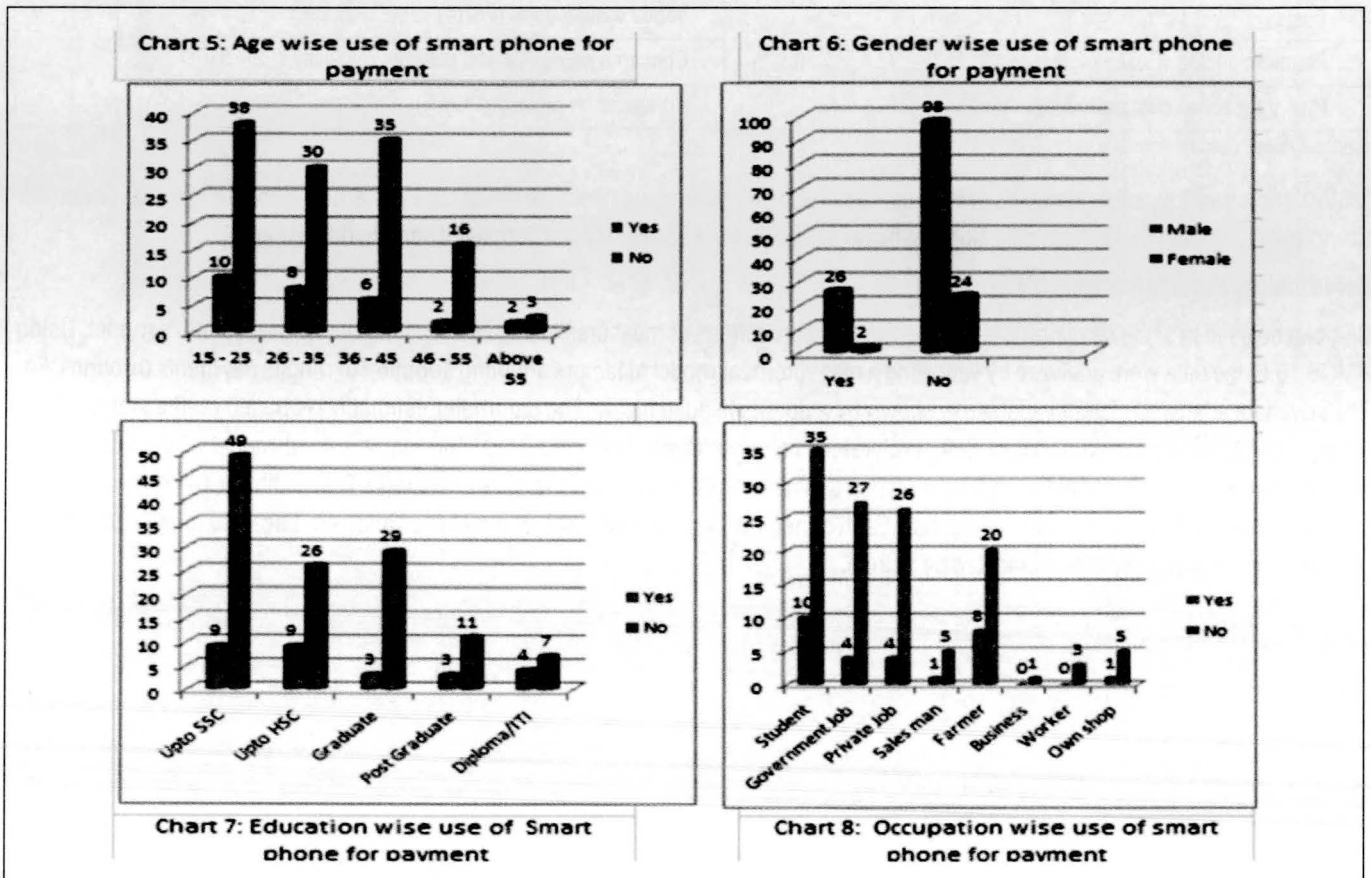
Figure 5: Awareness about Mobile payments



From Figure 5 it is clear 64.1% heard about Mobile payments for the first time, while 21.5% heard about it but never used it. Only 14.4% respondents know about it and using it.

Use of Smart phone for Payment:

Chart 6, 7, 8 and 9: Use of smart phone for payment demographic statistics



Figures 6, 7, 8 and 9 shows how the rural people use the smart phone for a payment. From the cross tabulation of age wise 15 – 25 age group people are using smart phone for their various payments. Students are using smart phone for their payments as well as their



family payments. Mostly the electricity payment, BSNL bill payments and Gas payments are done with the help of smart phone.

**Reliability**

**Table 1: Reliability values of each construct**

<b>Relative advantage</b>	0.894	<b>Compatibility</b>	0.888
Time and place independent purchases (RA 1)		High with digital content and services (Compatibility 1)	
Queue avoidance (RA 2)		High with small value purchases at POS (Compatibility 2)	
Enhanced payment instrument availability (RA 3)		Low with large value purchases (Compatibility 3)	
Complement to cash (RA 4)		<b>Trust</b>	
<b>Network external</b>	0.900	In merchants (Trust 1)	0.901
Lack of wide merchant adoption (Network 1)		In telecom operators (Trust 2)	
Proprietary devices/services (Network 2)		In financial institution (Trust 3)	
<b>Complexity</b>	0.876	<b>Perceived security risk</b>	0.902
Complex SMS formats, codes, service numbers (Complexity 1)		Unauthorized use (PSR 1)	
Management of separated accounts burdensome (Complexity 2)		Transaction errors (PSR 2)	
Complex registration procedures (Complexity 3)		Lack of transaction record and documentation (PSR 3)	
<b>Costs</b>	0.925	Vague transactions (PSR4)	
Premium pricing (Cost 1)		Concerns on device and network reliability (PSR 5)	
High transaction costs (Cost 2)		Concerns on privacy (PSR 6)	

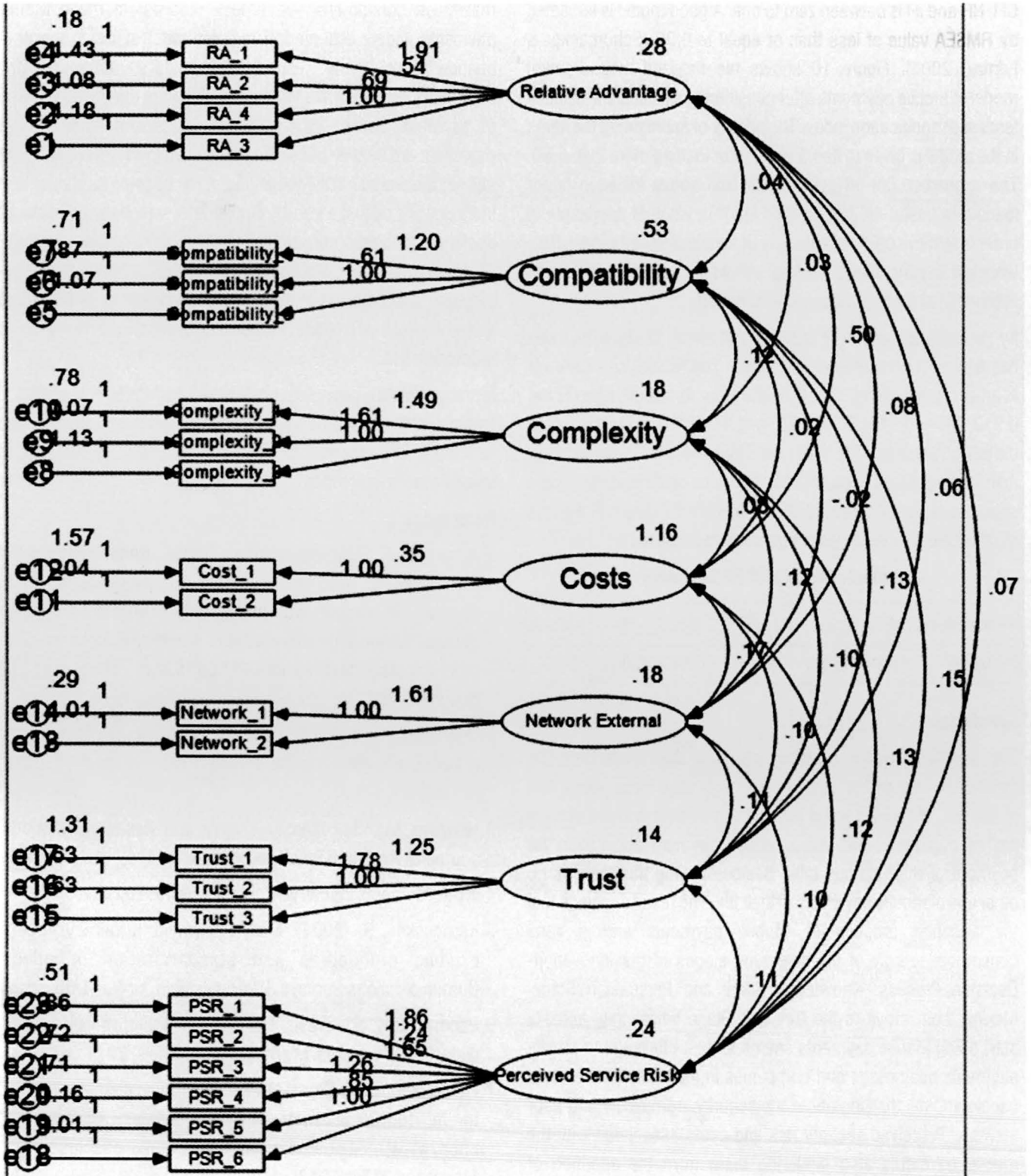
(Source: Primary data)

Table 1 shows the reliability statistics of various constructs of research like Relative advantage (4 items), Network external (2 items), Complexity (3 items), Costs (2 items), Compatibility (3 items), Trust 93 (items) and Perceived service risk (6 items).

**Confirmatory Factory Analysis (CFA)**

CFA can be used in scale development, testing the appropriateness of measures and to examine the use of measure in a model. Using AMOS 16.0, the data were analyzed by validating a measurement model of factors affecting adoption of mobile payments through CFA. The covariance between latent variables is shown by a double headed arrow. The parameter estimation is based on the standardized output of CFA. Before carrying out of CFA, exploratory factor analysis was conducted. The hypothesized model of the adoption of mobile payment is presented in Figure 1 with 7 latent constructs which represent Relative advantage, Compatibility, Complexity, Costs, Network External, Trust, Perceived service risk. Each construct has different items of observed variables. Each observed variable has one measurement error which is indicated by a circle.

Figure 10: Confirmatory Factory Analysis Diagram:



Some fit index tests, like the relative chi-square (CMINDF: the chi-square/degree of freedom), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Root Mean Square of Error Approximation (RMSEA), are chosen in assessing model fit. The suggested acceptable value for relative chi-square, CMIN/DF should be as high as 5 which are used to reduce

dependency on sample size. However, the cut-off point for TLI, CFI, NFI and IFI is between zero to one. A good model is indicated by RMSEA value of less than or equal to 0.05 (Schumacker & Lomax, 2004). Figure 10 shows the finalized measurement model of mobile payments after considering all statistical fit index tests and modification index. The priority of maintaining the items in the model is given to items with factor loading more than 0.50. The suggested cut-off point of 0.5 and above for each factor loading is based on Awang (2014). This value is applicable in order to achieve unidimensionality of a measurement model. Item with low loading factor loading should be deleted prior to the estimation of the final measurement model.

By performing the CFA, it is found that all the fit statistics index has fulfilled the requirement condition. The relative chi-square is at an acceptable range of 9.801, the other fit statistics like TLI = 0.912, CFI = 0.918, IFI = 0.918 and NFI = 0.904 are more than the cut-off value of 0.90. While the RMSEA = 0.05 is much better than the suggested value of 0.08. All values of the fit statistics are shown in Table 2. As a conclusion, the collected data is fit with the measurement model of learning environment based on CFA.

**Table 2: CFA Model Fit Summary**

Fit Statistics	CMIN/DF	TLI	CFI	IFI	NFI	RMSEA
Value	9.801	0.912	0.918	0.918	0.905	0.054

**Conclusion**

The literature review together with the data collection has satisfyingly answered to two research objectives. Very few customers are aware about the mobile payment and out of them limited customers are using mobile payment application for payment of their various bills. Besides paying this there is no other use of mobile payments in their life. The result suggests that the adoption process of Mobile payments among rural consumers is only at the beginning stages of the Innovation-Decision Process: Knowledge Stage and Persuasion Stage. Making them move to the Decision Stage where they actually start using Mobile payments seems to be a challenge to Mobile payments businesses and companies in India. Majority of rural people are still thinking about the security, complexity and poor network. Perceived security risk and costs associated with the mobile payments also hindering them from the adoption of mobile payments.

**Scope for future research**

Mobile payments are totally new in this technological; henceforth

the points of view might be limited. This research paper focuses mainly on consumers, yet in fact, in order to make Mobile payments widely accepted, it requires much effort in terms of change from many related stakeholders, especially the merchants who will have to adapt and change the traditional way of payment. Same story with financial sector since Mobile payments are heavily based on finance. Following questions are still not answered? Will Mobile payments become sustainable in India or will it be just a trend? Does the new technology really be useful for its consumers or just become a marketing exercise? Those matters are still debatable topics among business-bloggers and financial institutions. To understand better about many aspects of mobile payments, a separated research is recommended.

Moreover, Mobile payments businesses are in their first stages to be presented in India and totally new for rural areas. After a period of time, it is suggested to test the satisfaction of consumers toward mobile payments.

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