

# MODELLING CUSTOMER ADOPTION IN MOBILE FINANCIAL SERVICES

(An empirical study in Greater Visakhapatnam city)

**Abstract:** Mobile financial services consists of a wide array of services such as insurance, savings, loans and other investments distributed, subscribed to or paid by using mobile phone as a medium instead of a physical services branch. After Demonetisation on November 8<sup>th</sup> 2016, Mobile Payments and Receipts have become a buzz word. Even though mobile financial services are existing the term attracted more demand post demonetisation.

These mobile financial services provide ample opportunities to the financial service providers for improving the efficiency both in terms of operational and services to customers. This aspect leads MFS providers to undertake in depth research in terms of customer adoption to new platform for financial services and new dimensions in customer relationship management.

This paper aims at testing the adoption behaviour of customers in mobile financial services. The conceptual model developed is tested with the help of SEM-PLS method. The results indicated that the Customer adoption in Greater Visakhapatnam city is explained by the conceptual model. The model was well fit and the MFS providers can now take greater insights in to the model for better penetration and faster adoption.

**Key Words:** Mobile financial services, adoption, factors influencing, structural equation modelling

## Introduction:

Given the dynamic nature of life style, mobile phones have become handy not only for the purpose of communicating but in the mobile banking, payments and purchases. In the recent past mobile phones have tripled in sales indicating burgeoning need for financial services via mobile networks. The Government of India policy of demonetisation has come as addition to the increased need for mobile financial services.

With this background the present research was undertaken to study the adoption behaviour of consumers in mobile financial services.

## Review of Literature:

Customer Behaviour in adoption of new technology and innovation is well researched by Roger's (1991) innovation diffusion theory (IDT), Davies' (1989) technology acceptance model (TAM), the extended technology acceptance model (Davis 1989), the theory of planned behaviour (Ajzen 1977) and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al. 2003).

Out of these Technology Acceptance Model is the most sort after model in the prediction of future consumer model which was tested by Adams et al., 1992; Chau and Hu, 2002; Davis and Venkatesh, (1996); Kwon and Chidambaram, (2000); Legris et al., 2003), among other places in the mobile services domain (Cheong and Park, 2005; Kwon and Chidambaram, 2000; Nysveen et al., 2005. The Technology Acceptance Model (TAM) is placed on perceived utility, perceived ease of usage as fundamentals of new system and usage (Davis, 1989). TAM has received praises from earlier researchers on its contribution towards our understanding into consumer behaviour. Lu et al (2003, p.207) states that: "Throughout the years, TAM has received extensive empirical support through validations, applications and replications for its power to predict use of information systems". Also, Legris et al (2003, p202) conclude that "TAM has proven to be a useful theoretical model in helping to understand and explain user behaviour in information system implementation".

Rogers' Innovation Diffusion Theory (Rogers, 1995) has received similar attention by scholars in explaining consumer behaviour towards new technology. According to Rogers, innovation is defined as "an idea, practice or object that is perceived as new by an individual or another unit of adoption", while diffusion is "the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995, p.10).

In his theory Rogers found the characteristics of any innovation as relative advantage, complexity, compatibility, trial ability and observe ability. In this study both TAM and ID are studied as both complement each other in some characteristics.

## Research Methodology:

For this study a sample of 500 respondents are taken in Greater Visakhapatnam city which is emerging as economic, IT and education hub in the state of Andhra Pradesh post bifurcation. Out of the 500 sample size only 478 responded out of which only 462 responses were taken into study as others constitute incomplete response? Convenient sampling technique was employed to select the sample. Respondents were selected at shopping malls, INOX theatres in the evening time after 5pm daily.

A structured questionnaire was employed to collect the responses from the sample. The Questionnaire consists of demographic, mobile usage behaviour and accessing financial services via mobile phones.

## Objectives:

To Study the customer behaviour in the adoption of mobile financial services.

## Development of proposed model:

Based on the extensive review of literature the model proposes that behavioural intension of consumers towards adoption and usage of mobile financial services is affected by perceived utility(PU), perceived ease of usage(PEU) under TAM model and also compatibility(COM), trial

ability(TR) and observability(OB). Other factors such as perceived risk (PR), perceived trust (PT) and transaction cost(TC) are also studied for their effect on Adoption and usage behaviour of consumers.

**Perceived Utility(PU):**

It is referred to as the usefulness of the usage of this particular mobile technology for financial services which will yield an increase in the customer’s performance. In this model it can be how customers perceive this usage of technology will increase his/her performance. This aspect will influence the customers’ behaviour intention to adopt this technology. If they perceive this particular feature of financial services through mobile phones may not enhance their performance then they may think of not adopting.

H<sub>1</sub>: higher Perceived Utility (PU) significantly leads to Higher behaviour Intention(BI) to adopt the mobile financial services.

**Perceived Ease of Usage (PEoU):**

Perceived Ease of usage defined as “the degree to which a person believes that using a particular system will be free of effort” (Davis, 1989). In MFS it can be considered as access to customer services, registration process, ease of navigation in app/ home web site, payment options, ease of using payment mode, access to fund transfer via Debit/credit/ NEFT/payment apps options, access through updated information etc. all these features will determine the comfort of customer in utilising these mobile financial services.

H<sub>2</sub>: higher Perceived Ease of Usage (PEoU) significantly leads to higher behaviour Intention (BI) to adopt the mobile financial services.

**Perceived Risk (PR):**

It is referred as customers’ belief about the unlikely negative outcome of using new technology, mobile financial services. In this study many of the respondents felt that this feature is one of the decision criteria in the decision of acceptance or rejection of usage of MFS.

H<sub>3</sub>: higher Perceived Risk (PR) significantly lowers BI of customers.

Perceived trust (PT): mobile financial services for a better penetration in to the market must promise a secured transaction. This security and privacy will lead customers to adopt/reject usage of mobile financial transactions and financial decisions through mobiles. This trust can be measured in mobile technology trust and mobile vendor trust factors (Siau and Shen (2003)). Higher reliability in privacy from mobile vendors effect customers’ decision to mobile financial services.

H<sub>4</sub>: higher Perceived Trust significantly increases BI of Customers.

Transaction cost (TC): transaction cost that includes registration fee, transaction price is a major determinant in customers’ behavioural intention to use MFS. In this study Transaction price is taken as customers’ transaction cost.

H<sub>5</sub>: higher transaction cost significantly lowers BI of Customers.

Trial ability (TR): customers are willing to adopt any new technology only when they try before deciding on and MFS is not an exception. This feature refers to are these MFS providers providing any free-at –first use to customers. Customers, happy at their first hands on, tend to adopt MFS.

H<sub>6</sub>: Trial ability significantly influences the customers’ intention to use MFS.

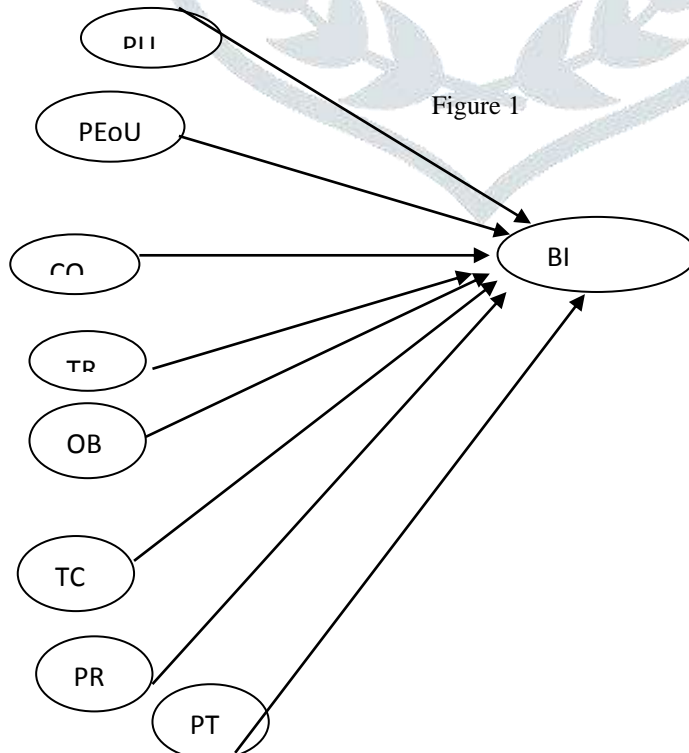
Compatibility (COM): Compatibility refers to the degree with which the innovation, in this paper use of MFS, is consistent with the past values, experiences and expected needs as perceived by the customers. MFS which is compatible will be adopted by the customers within less time.

H<sub>7</sub>: higher compatible MFS significantly leads to faster adoption by the customers.

Observability (OB): this refers to the degree with which the usage of innovation can be communicated and visible to others. This particularly influences the social image of the customer using it. The higher the observability the better social image and leads to faster decision to adopt/reject.

H<sub>8</sub>: Observability significantly influences the BI of customer adopting MFS.

**Proposed Model:**



**Results and Discussions:**

**Descriptive Statistics:**

Out of the total 462 respondents the sample consisted 67.1% of male and 32.9% female with a mean age of 29 years. Majority of the respondents are graduates (61%) followed by intermediate qualification (22%). With regards to the income, majority of the respondents fall under the income group of 20,000 per month. Private employees comprised 48% of the sample size followed by self employed (31%).

**Reliability and Validity:**

The data was tested for reliability. The Cronbach’s alpha is 0.712 which is found to be acceptable (Nunnally, 1978). The KMO and Bartlett’s test was given in the table 1 indicating the suitability of the data for underlying structure detection.

**TABLE 1  
KMO AND BARTLETT'S TEST**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.743
Bartlett's Test of Sphericity	Approx. Chi-Square	1780.693
	Df	406
	Sig.	.001

The data was then put to Principal component analysis to extract the factors.

**Structural Model:**

SPSS AMOS 18 version is used to test the proposed model.

Goodness to fit index is used to test the fitness of data in to the proposed model. GFI in the present study was found to be 0.83(greater than or equal to 0.9 indicates a good fit (Hu & Bentler, 1999)) which is closer to the norm. The data with a sample size of 462 might not be a perfect fit but can fit well.

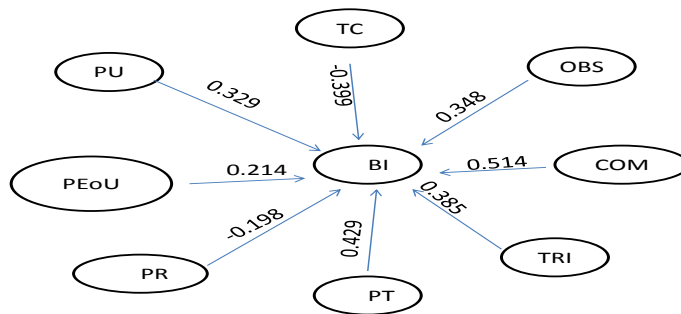
**Hypotheses testing:**

As the data satisfactorily fits in the model, a structural model developed to test the hypotheses. Multi collinearity is ruled out as the correlations between the independent variables are low. The results of the structural model are given in the table no 2.

**TABLE 2**

Path	Path Coefficient	t-test	p value	Hypothesis testing result
H <sub>1</sub> : PU → BI	0.329	2.198	0.001	Supported
H <sub>2</sub> : PEOU → BI	0.214	1.989	0.005	Supported
H <sub>3</sub> : PR → BI	-0.198	2.001	0.009	Supported
H <sub>4</sub> : PT → BI	0.429	1.877	0.001	Supported
H <sub>5</sub> : COM → BI	0.514	1.521	0.000	Supported
H <sub>6</sub> : TC → BI	-0.299	1.273	0.021	Supported
H <sub>7</sub> : OBS → BI	0.348	2.781	0.000	Supported
H <sub>8</sub> : TRI → BI	0.385	2.982	0.016	Supported

**FIGURE 2  
The tested Structural Model**



**Implications of the study:**

Mobile financial services are primarily thought to be only mobile banking by the respondents in the sample. With proper understanding of the features they started realising them as not only payments but also other financial transactions and decisions. With the advent of mobile

valets such as Paytm, Bhim and more coming in to the picture it is utmost important for MFS providers to understand the customer behaviour in the adoption of these services over mobiles.

This paper primarily aimed at studying the behavioural intention of customers in adopting mobile financial services in their day to day life such as payment of bills, fund transfers, investment information and insurance payments. Various factors from TAM model such as Perceived utility, perceived ease of use and also other factors Transaction cost, observability, compatability, perceived risk and perceived trust as an extension of TAM model were studied for their influence on Customer adoption behaviour.

In the target area, greater Visakhapatnam city respondents considered Perceived trust in both privacy and reliability areas as one of the major determinant of adoption/ rejection criteria.

With the findings of the tested model it is evident that to gain faster adoption of new services by customers MFS providers must consider the free at first use, privacy, security, relative advantage over traditional OTC services that ensure a greater penetration in less time.

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