

# CUSTOMER SATISFACTION WITH VIRTUAL BANKING: A STUDY WITH TAM

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**Abstract:** Electronic banking has gained attention all over the world after the massive adoption of technology and the development of information and communication technology. The electronic banking research also has been explored by many researchers but most of the customer centric studies addressed the issue of adoption intention of electronic banking. The post adoption studies in the area of electronic banking have addressed the customer satisfaction as a major concern. The context of electronic banking adoption different theoretical models has been used in the studies. However, the Technology Acceptance Model is widely used in adoption studies. Since customer satisfaction and adoption related factors are un connected in the previous studies it does not help to clarify the relationship between these factors. The present study attempts to examine and specify the relationships among the TAM constructs and customer satisfaction. The findings of the study support the anticipated relationship of the two factors Perceived Ease of use and Perceived Usefulness has significant impact on customer satisfaction. In addition the study explained customer satisfaction based on e service quality scale.

**Keywords:** Perceived ease of use, Perceived Usefulness, Customer satisfaction.

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## 1. INTRODUCTION

Adoption of internet technology by consumers have created a huge change in the pace and pattern of doing banking business all over the world. The fast changing hectic lifestyle of the people necessitated the availability of all the basic services through virtual channels specially the banking services. This has created the revolution of service delivery by banks directly to customers over the internet. Virtual channels are now completely replaced the existing traditional system of banking. The virtual banking is a collective term includes all types of innovative banking products and services like internet banking, mobile banking, card banking, electronic fund transfer system, electronic payment systems, electronic clearing services, etc. The UPI based digital payment systems are also performing the basic banking functions like transfers and payment services in the current period.

The concept of technology acceptance had gained the attention of researchers during the time of introduction of the computer technology. Adoption of technology enabled products and services and the issues of adoption had studied by many researchers. Many researchers are attended the questions why people prefer these alternative channels of banking or not yet adopted such types of products and services. Different types of theoretical models are used for explaining the behavior of people towards technology adoption as well as non adoption. Diffusion of Innovation Theory (Rogers, 1983), Theory of Reasoned Action (Fishbein & Ajzen, 1975), Theory of Planned Behavior (Ajzen, 1991), Technology Acceptance Model (Davis, 1989), and Decomposed Theory of Planned Behavior (Taylor & Todd, 1995) are some of the theories most commonly used in explaining the consumer behavior. Despite the wide interest in adoption, very little is known about how the interest and curiosity of the people in this technology are maintained and most of all how satisfied the people are with this new products and services. The individual level of adoption studies has already listed many factors which are affecting the initial adoption intention of customers on technology based banking services.

Globalization and de-regulation over the past decades helped the banks to expand their reach beyond countries and continents. This was one of the prime reasons for changing the banking sector as so competitive. Being the banking sector as competitive and efficient it is hard to compete on price alone. The differentiation in service delivery by offering

customized products and services become necessary for banks to withstand the competition. Maintaining the existing customers as satisfied and loyal instead of attracting the new customer being the basic strategy of banks for the time period. Hence, the banks turned into improvement of the quality of services and service delivery. Since, a wide range of electronic banking products and services are offered by commercial banks, it is not a surprising factor that customer satisfaction alone can strengthen the loyalty of customers. A considerable amount of studies has already addressed the subject of customer satisfaction in online banking platform by analyzing service quality. Service quality experience is the criterion for different level of satisfaction for those people who are using similar type of products and services.

A large number of Indian banks are also popularised their vision on technology adoption by introducing a multitude of innovative banking products and services from early 1990s itself. After a decade, the digital India campaign by the government also boosted the use of electronic banking products and services. Massive adoption of technology based banking products and services happened during the time of demonetization in India. Electronic banking and digital payments have gained the attention by common people through the extended support of the government on these types of services at the time of demonetization. Once we analyse the customer satisfaction studies on E- banking, a plenty of studies can be found as addressing different factors that contributes towards the satisfaction. The significant amount of research can also be traced back from the literature focusing on service quality as the major determinant of satisfaction. The most cited scale of service quality SERVQUAL is used in these literatures for assessing the quality of services and satisfaction is measured through the expectation and confirmation gap. This study in turn happened in a different perspective that; it is concentrating on the technology characteristics, basically the factors on which adoption intention has been formed. It is evident from the technology adoption studies that, adoption is based on certain perceptions of the prospective users on the specific characteristics of innovations. Technology adoption literatures are widely utilized a prominent model of adoption that is Technology Acceptance Model. Detailed review of the literatures of innovation adoption studies in banking has evidenced that, these technology characteristics have significant impact on the post adoption behavior of customers mainly in determining satisfaction. This paper identifies the role of technology characteristics on customer satisfaction with online banking.

### **Research Gap**

The studies so far done in this area had covered the aspects of non- adoption, factors limiting adoption of electronic banking. Once the customers are using an innovative product or services they become the adopters, but the problem lies with the active usage of such services in the future to meet their daily routines. So more over studying the adoption, it is essential to study the post adoption behavior and intention. No much literature was found on addressing the issues of post adoption, includes satisfaction, trust, loyalty, risk and threats in virtual banking. The crucial factors behind the extensive usage of virtual banking services relies on satisfaction and trust. Since the customer satisfaction is much more important in technology oriented products and services, especially in banking services. Very few studies were found addressing this issue.

The pre- adoption behavior has importance only in the initial stage of accepting the technology. After the adoption of technology, customer satisfaction is important in order to determine the success and continued use of the same. Satisfaction had measured in previous literatures on any of the technology based banking services using traditional method of service quality and expectation and confirmation model. From the existing literature on information system research found that, different type of factors has significant influence in determining customer satisfaction in technology usage. Hence, Present study is an attempt to find out whether the influence of important factors of technology adoption had any influence on the customer satisfaction in virtual banking context.

## **2. LITERATURE REVIEW**

### **E- banking and customer satisfaction**

E banking is the delivery of banking information and services via different delivery platforms that can be used with different terminal devices such as personal computer and mobile phones. Studies on customer satisfaction in E- banking are mainly based service quality. Many studies are utilized the model of service quality scale for analyzing the quality of services and thereby assessing the customer satisfaction. Customer satisfaction is defined by (Oliver, 1980) as product performance equivalent to customer expectation. Customer satisfaction is termed as in the service literature as a person's feeling of pleasure or disappointment resulting from comparing a product's performance (outcome) in relation to his or

her expectation. Kotler and Keller (2006) suggested that, customer satisfaction stands for emotional states of pleasure or disappointment which a person may feel due to comparison between his perception and expectations of product's performance. Tarus and Rabach(2013) postulated that a dissatisfied customer is one whose expectations exceeded the actual outcomes of service interactions whereas a satisfied delighted customer is a case of interaction matching or surpassing interaction. 17 dimensions scale was developed by (Jun & Cai, 2001) for assessing the e-banking service quality, that includes three broad categories – customer service quality, banking service product quality, and online systems quality. The derived dimensions of customer service quality are reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding the customer, collaboration, and continuous improvement. The dimensions of online system quality are content, accuracy, ease of use, timeliness, aesthetics, and security. (Zeithaml, A., & Malhotra, 2001) developed a scale for measuring e service quality that includes the dimensions like; Access; ease of navigation; efficiency; flexibility; reliability; personalization; security/privacy; responsiveness; assurance/trust; site aesthetics; and price knowledge. According to (Hansemark & Albisson, 2004) customer satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfilment of some need, goal or desire.

### **Perceived Ease of Use**

The customer intention to adopt a new technology is primarily determined by the ease of use of the technology (Davis, 1989). It is an important factor the information system acceptance and internet. It is the degree to which a person believes that, using a particular system would be free of effort. According to (Eriksson & Sharma, 2003) Perceived ease of use implies that existing routines can be applied to the situation at hand. In such a case, there will be no perception of uncertainty. Several replication studies have confirmed the relationship of Ease of Use and Usefulness in adoption intention (Adams, Nelson, & Todd, 1992), (Hendrickson, Massey, & Cronan, 1993), Ease of use has often been used online context as usability (Zhou, Dai, & Zhang, 2007). Many researchers have empirically tested and proved that perceived ease of use has a significant effect on customer satisfaction. Hence the following hypotheses are proposed;

H1: There exists a significant relationship between Ease of Use and customer satisfaction.

### **Perceived Usefulness**

The original TAM model includes Perceived Usefulness another construct along with Perceived Ease of Use. It is defined by the author as the degree to which a person believes that using a particular system would enhance his or her job performance. Davis pointed out the prominence of perceived usefulness: users are driven to adopt an application primarily because of the functions it performs for them and secondarily for how easy or hard it is to get the system to perform those functions. The behaviour intention is determined by 'Perceived Usefulness' influenced by the technology 'Ease of Use' and the attitude by using this technology (Lévy Mangin & Bourgault, 2011). In the context of user acceptance of internet banking services, perceived usefulness could be because of transactions like online request for cheque/demand draft, sending monthly e-statements, online payments, etc. that improves performance, saves time and increase effectiveness of service or some or several add-on benefits such as bill payments, mobile recharge, etc. These benefits are also expected to be further enhancing over a period of time through technological advancement or breakthrough (Kesharwani & Singh, 2012). Perceived usefulness and Ease of use are the two important constructs under TAM model widely discussed in the literatures. Perceived Usefulness is also used in post adoption stage for analyzing the satisfaction in technology platforms. From this background in supporting the view of earlier researchers the following hypothesis is proposed;

H2 : Perceived Usefulness has a significant effect on customer satisfaction.

H3 : There Exist a significant relationship between Ease of Use and Usefulness

## **3. OBJECTIVES OF THE STUDY**

The main objective of the present study is to analyse the influence of factors contributing to adoption decision has any influence in customer satisfaction in technology enabled banking products and services.

### ***Specific objectives***

- ✘ To analyse the impact of Ease of Use on customer satisfaction

- ✘ To analyse the impact of Usefulness on customer satisfaction
- ✘ To analyse the relationship between Ease of Use and Usefulness of E- banking products and services
- ✘ To develop and statistically test a model linking ease of use and usefulness with customer satisfaction in virtual banking usage.

#### **4. RESEARCH METHODOLOGY**

The research design was descriptive and explanatory and the study was conducted in Kerala. Respondents are selected through the convenience sampling method. The sample size fixed as 900 bank customers who are using technology enabled self-service banking products and services. Structured questionnaire was used for data collection and collected data through online and offline mode. Statistical package SPSS 20 and AMOS 21 are used for data analysis.

##### **Socio-demographic profile of the respondents**

Age, gender and occupation are the main demographics taken into consideration in this analysis. The majority of the respondents are male 57 percent and 43 percent are females. Following table shows the gender wise classification of the respondents.

**Table No: 1.1 Gender wise classification**

Gender	Frequency	Percentage
Male	512	56.9
Female	388	43.1
Total	900	100

Occupation is another demographic variable which affects the use and satisfaction of technology enabled banking products and services. Following table shows the occupation wise classification of respondents.

**Table No; 1.2: Occupation wise classification of respondents**

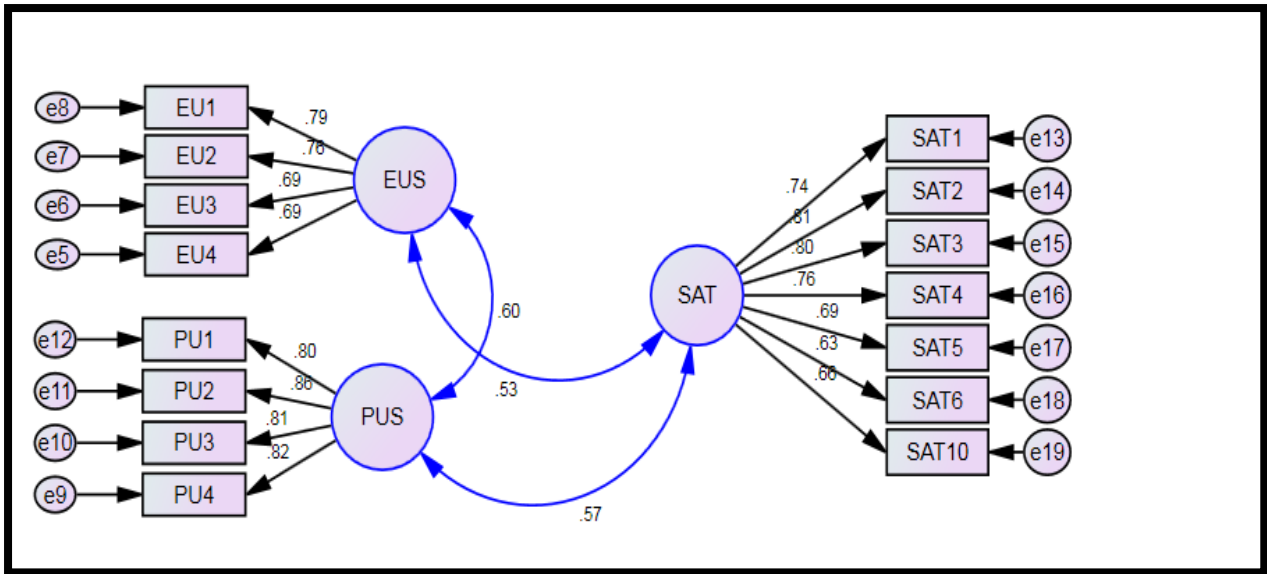
Occupation	Percentage
Government Employees	13.6
Private employees	23
Agriculture	14
Professional/ self employed	10.1
Business	8.2
Others	30.3
Total	100

Age is the main demographic variable which is to be taken into consideration while analyzing the satisfaction. The majority of the sample respondents are under the age group of 26-30, followed by 31-35, and below 25. Most of the users of technology led banking products and services are coming under the age group of 25-35 (nearly 45%) which is more than half of the total respondents.

##### **Measurement of constructs**

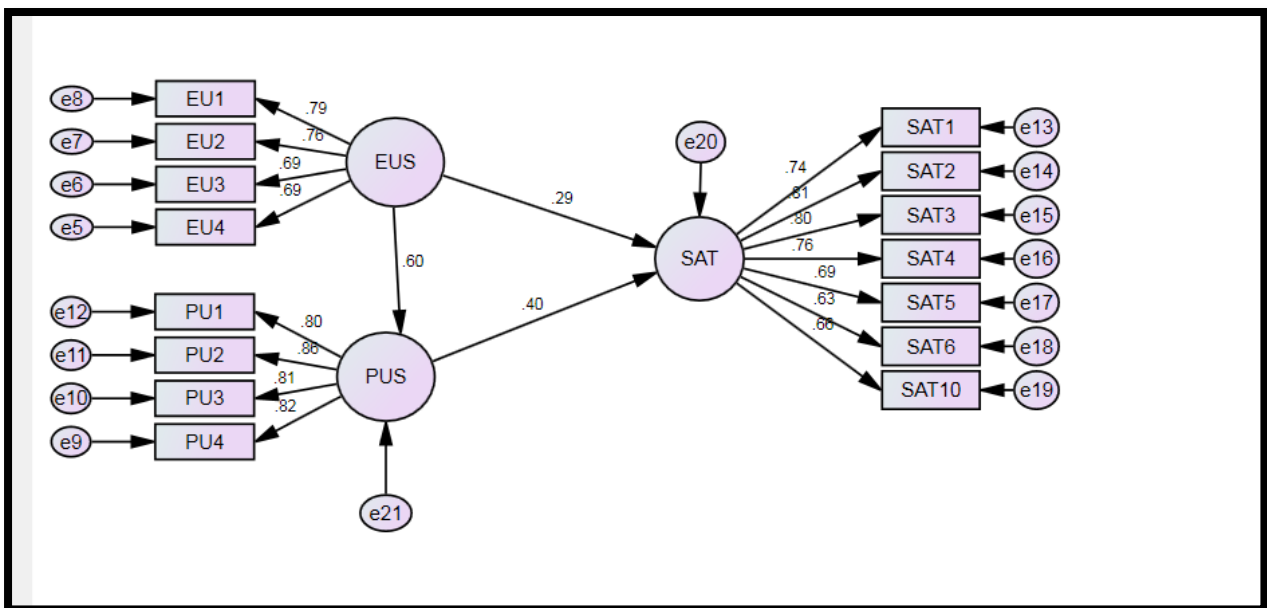
The main constructs of this study are adapted from the Technology Acceptance Model. Then two constructs Ease of Use and Usefulness are measured on the original scale of Davis (1989). The scale includes four items for each construct. Cronbach alpha for the scale, ease of use 0.824 (C.R 0.823) and for usefulness is 0.893 (C.R 0.893). The outcome variable satisfaction is measured on a modified scale of Zeithmal and Parasuram (2000) with seven items. The Cronbach Alpha value of the scale is 0.886 (C.R 0.888). Exploratory Factor analysis was carried out on the modified scale of customer satisfaction. The result of sampling adequacy test Kaiser-Meyer-Olkin Measure of Sampling Adequacy KMO was 0.914 supports the sampling adequacy. confirmatory factor analysis was performed and the structural relationship was also analysed with the AMOS 20.

Measurement Model



The CFA model result confirms the estimated relationship of the latent constructs. The model fit values GFI 0.954 indicating the goodness of fit supports the good fit of the model, RMR 0.031, RMSEA value 0.053, all other comparative fit indices (NFI-0.957, CFI-0.969, RFI-0.948, TLI-0.962) are indicating a good fit of the default model.

Structural Model and Hypothesis testing



The structural relationship is tested for the constructs and following result is obtained.

Path	Standardized Regression weights	P values	Status
Ease of use → satisfaction	0.293	***	H1 Accepted
Usefulness → Satisfaction	0.396	***	H1 Accepted
Ease of Use → Usefulness	0.596	***	H1 Accepted

All the values of AVE are above 0.5, PUS (0.677), EUS (0.541), SAT (0.533) hence, convergent validity ensured for the constructs of hypothesized model. The MSV values are less than the AVE values (PUS 0.355), EUS (0.355), SAT (0.325) and the square root of AVE of each construct is higher than that of its highest correlation with any other construct. Hence Discriminant validity is also ensured. To summaries, the hypothesized is fit model is fit for the data.

## 5. SUMMARY OF FINDINGS

The significant relationship between the constructs ease of use, usefulness and satisfaction of the customers in online banking context has been proved from the study. It supports the earlier studies on satisfaction of E banking. Ease of use has significant positive impact on the usefulness since p value is \*\*\* and it has 60% of variance explaining in usefulness (Regression value 0.60). The relationship between ease of use and satisfaction is also significant at an acceptable level (P value \*\*\*) it explains 29% variance in explaining satisfaction. In addition to that, usefulness has a significant positive relationship between customer satisfaction since the p value is significant and it explains 40% of variance in explaining customer satisfaction. Usefulness is the most important predictor of satisfaction (beta value is 0.60) than ease of use. Ease of use and usefulness together contributes 28%, of the variance in explaining customer satisfaction. It is found that, place of residence, age, gender, occupation and education was not significant with satisfaction whereas income is significant.

## 6. CONCLUSION

Study is a cross sectional rather than longitudinal and the findings of the study is based on the self reported data from customers. It is evidenced from the study is that both TAM variables have significant influence in predicting the customer satisfaction. Since the customer satisfaction is the most important issue to be addressed in the present scenario as the customers of banks are turning to use the electronic banking products and services. The concentration should be given in the design of the products and services. They should be in a customized manner to enhance the usefulness of the products and services. Even though the ease of use has a significant impact on satisfaction, but not strong as usefulness, at the same time it has significant impact on predicting usefulness, so if the banks focus on improving the easiness of the products and services it will strengthen usefulness and thereby satisfaction. For the analysis of adoption intention, perception of ease of use and usefulness of technology is taken into consideration. If customers are not experiencing the same after adoption, it will result in dissatisfaction of the products and services.

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