

Relationship between demographic variables and behavioural intention to adopt internet banking

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Abstract

The present study focuses on demographic profile of the customers and its relationship with adoption of internet banking. The study was triggered by the fact that private sector banks had introduced internet banking for the benefit of both the customers and banks but the adoption rate is low in Tamil Nadu, South India. Banks are the pillars of the economic development of a country. Many researchers had identified many factors that influence the adoption of internet banking in the country but not many had studied the relationship between demographic variables and adoption of internet banking. Hence there was a need to study the demographic variables. The researcher hypothesised that there is no relationship between demographic variables and adoption of internet banking. Required data was collected through survey of the customer (N= 573) of Indian private sector banks in Tamil Nadu. Correlation was used to test the hypothesis under study. The results showed that there is a significant relationship between demographic variables and behavioural intention of the private sector bank customers adopting internet banking based on UTAUT model. The study recommended the banks to tailor make their efforts to attract middle aged, male, urban living, and middle income earners, educated and working in private sector customers.

Keywords: Internet banking, private sector banks, correlation, behavioural intention

Introduction

With the advancement of science and technology, the modern market has become a buyer's market i.e. customer oriented market. Demographic variables play an important role in understanding the consumer behaviour in different segments as found by Block and Roering (1976) and Lewis (1981). Kotler (1982), found that the demographic variables in a study include age, sex, income, occupation, education. There is a general unanimity among researchers that demographic variables play a significant role in determining internet banking adoption. Studies have been conducted to determine the factors that influence the adoption of internet banking but the relationship between demographic variables and adoption has been understudied. But some researchers had found out that demographic characteristics such as education, age, and income are significantly associated with technology (Dickerson and Gentry, 1983; Zeithaml and Gilly, 1987). Sathye (1999) could not find correlations between demographic traits and the use of online banking services. No significant relationships were found between respondents' demographic variables and adoption of Internet banking services in the previous studies. This research sought to establish the relationship between demographic variables and adoption of internet banking in Tamil Nadu, South India.

Objectives of the Study

In many studies it is found that, there is a positive relationship between customers' demographic variables and adoption of internet banking. Based on this, the present study intended to find relationship between customers' demographic profile and internet banking in Tamil Nadu, South India. The objectives of the study are:

*To find out the demographic variables of the customers
To assess the relationship between demographic variables and behavioural intention to adopt internet banking*

Review of Literature

Murillo and Roisman, in 2004 indicated that a bank's decision to provide internet banking depends on demographic characteristics of prospective customers, as well as the locality of the bank in a metropolitan area and they agreed that internet banking has to reach different demographic groups. In 2006, Sakthivel asserted that when the demographic characteristics are identified, banks can develop products and services according to the needs, tastes and preferences of the customers. Also, he concluded in the usage of internet banking, demographic characteristics, such as age, marital status, gender, occupation, annual income, and educational qualification have an influence on a consumer's adoption of internet banking. High income, relatively young age and good education have been singled out as explaining the acceptance of internet banking. In addition, a typical internet banking user has been identified as a high involvement person or, in parts, as a member of the career oriented upper class (Jayawadhera and Forley, 2000). Gender is found to be influencing internet banking adoption as some studies argued that internet is male dominated (Venkatesh and Morris, 2000). Thus this research sought to examine the relationship between demographic variables such as age, gender, place of residence, income, occupation and educational level. Literature suggests that there is a strong relationship between age and the acceptance of new technologies (Al Somali *et al.* 2009, Gattiker, 1992, Harrison *et al.* 1992). Srivastava, (2007) studied the customer's perception on usage of internet banking and found that education, gender, income

play an important role in the usage of internet banking. Mann and Sahni, (2007) substantiated that only income as a variable, acts as a roadblock in the adoption of internet banking services. In 2009, Uppal and Chawla agreed that customers are interested in e-banking services. The majority of professionals and business class customers as well as highly educated and less educated customers feel that e-banking has improved the quality of customer services in banks.

In 2009, Nyangosi *et al.*, indicated that customers have developed a positive attitude to the technology and they gave much importance to the emergence of e-banking. Dixit and Datta (2010) studied the acceptance of online banking in India from the point of view of adult of customers above the age of 35 and found that in spite of their security and privacy concern, they are willing to adopt online banking. Jain and Malhotra in 2012 studied the factors affecting the adoption of internet banking in India using convenience sampling. The results showed that the demographic factors, particularly age; qualification, profession, income and number of banks dealing with are the significant variables affecting usage of internet banking.

In 2012, Sonia and Sehgal attempted to explore the sources of awareness regarding internet banking and usage of internet banking services and assess the satisfaction level of the respondents on the basis of their demographic profile across the public and private sector banks. It was found that age has a statistically significant effect on the choice of a particular bank. Income has a significant influence on the number of banks used. It was found that there is a significant influence of gender on the choice of a bank. An analysis also demonstrated that statistically there is no significant relation between age and number of banks used, gender and number of banks used and income and customer preference of banks.

Sandeep Kumar (2013) conducted a study only in Shimla (India) and focused on user acceptance of 3G technology used in organizations or communities by adding some new moderators like gender, age, educational level, experience, individual impacts and organizational impacts to TAM models. The correlation analysis found that gender, age, educational qualification, experience, individual impacts and organizational impacts has a significant influence of different construct of TAM model.

Unified Theory of Acceptance and Use of Technology Model in India

Saibaba *et al.*, (2013) proposed a comprehensive model called Internet banking Acceptance in India; constructs were based

partially on the UTAUT and three additional variables as identified to be context-specific. The data presented in this study are based on 325 questionnaires collected from bank customers in Hyderabad city. The empirical findings of the study confirmed the relationships between the identified latent variables and their impact on the adoption of internet banking services.

Private bank customers have started using internet banking nowadays as they trust these banks for its technology and no research has been conducted to identify the factors influencing private bank consumers to adopt internet banking in the light of the UTAUT model in the Indian context and this is a unique study in the country.

Also from the above literature it is understood that very less research is done on internet banking in India based on UTUAT model though it is very popular in the adoption of technology. A detailed literature review found that previous studies examining the internet banking acceptance in India by private sector bank customers did not have exhaustive and systematic theoretical approach, relating to the relationship between demographics and adoption of internet banking in Tamil Nadu. Hence, to fill this gap, this study is the first attempt to address this limitation by applying the UTAUT model along with trust on the adoption of internet banking by private sector bank customers in South India.

Methodology

The study is a descriptive research where the population is new age private sector bank customers. The data was collected through 600 responses of 573 customers of private sector banks in Tamil Nadu, South India. Data was collected using questionnaires which were randomly distributed to customers using 5 point Likert scale based questionnaire (1= Strongly Disagree, 2=disagree, 3=Neutral, 4=Agree and 5= Strongly Agree) and short discussions with the respondents. The respondents for this study (N=573) was selected through convenience sampling method. There are seven new age private sector banks functioning in Tamil Nadu. They are called as new age banks as they are licensed by Reserve Bank of India after 1990. As these banks had brought technology to the country, they were taken for the study.

Proposed Model

The proposed model is developed that demographic variables like age, gender, marital status, place of residence, occupation and monthly income, assuming that they have an influence on the BI of the customers.

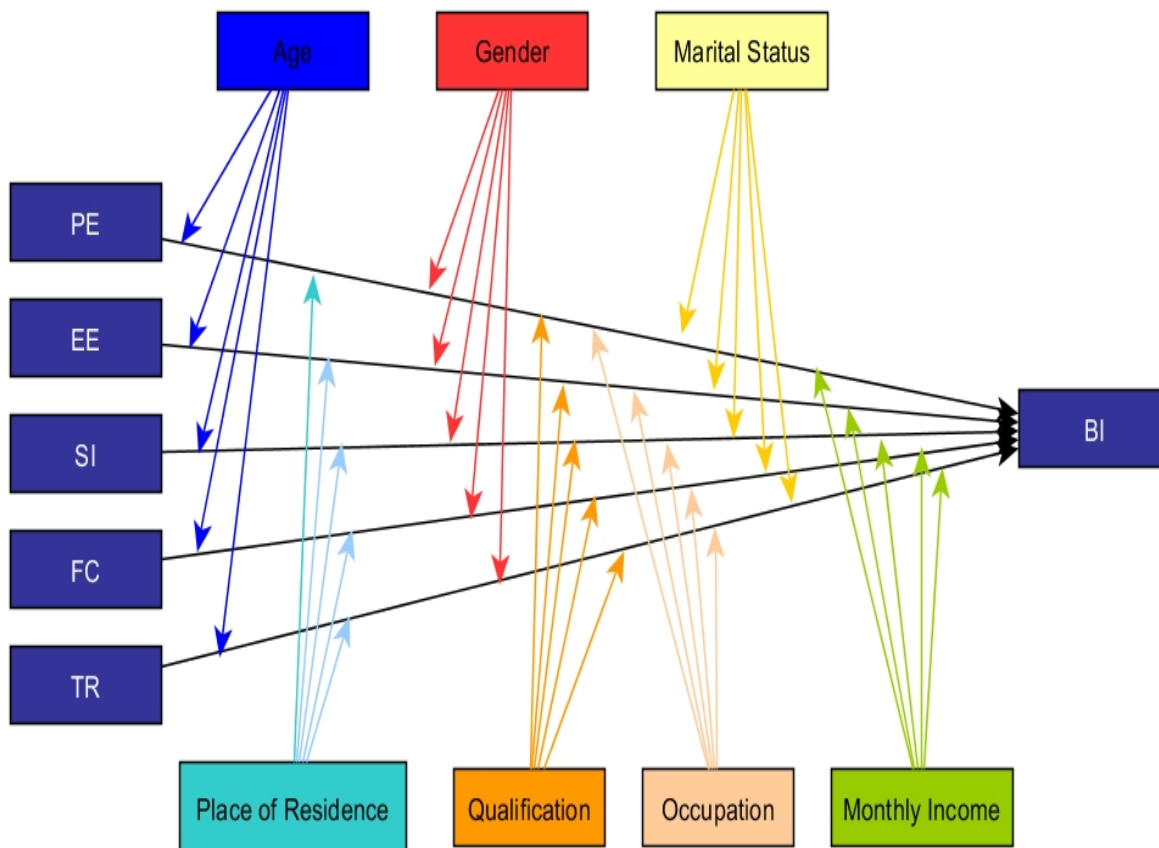


Fig 2: Proposed model for internet banking adoption

Data Analysis of Data

Respondents' Demographic variables

The main purpose of the study is to determine the relationship between demographic variables and adoption of internet banking. The demographic variables are collected from the respondents of the study, which include age, gender, marital status, place of residence, educational qualification, occupation and monthly income which are shown in the Table 1. The respondents selected for the study are those who completed 18 years of age as they can open their bank account in any bank. Out of 573 respondents, 72.8 percent of the respondents are between 26-35 years. The results are similar to the studies done Jayawardhena and Foley 2000; Mattila 2001.

The customers in the age group of 46-55 years are 2.8 percent. Hence it is understood that the typical internet banking user is young as the literature says. Both male and female had responded to the study. The study shows that they are 68.8 percent of the male respondents and 31.2 percent of females. The result testifies the statement of Khalil and Pearson (2007) that less female customers adopt internet banking. It is same as the report by some experts that women have greater fear and less interest in new technologies such as the internet (Morahan-Martin, 2000). Also, it is inferred from the table that married customers adopt internet banking more than single customers. Similarly, 80 percent of the customers are married; urban customers constitute 58 percent and semi urban constitute 42 percent. No customer from rural areas had responded to the study. The findings of the study is not similar to the report by Team next big what 2011 as it said a significant percent of these users are from the non-metros.

Table 1: Demographic profile

Items	Categories	N	%
Age (Years)	18-25	48	8.4
	26-35	417	72.8
	36-45	52	9.1
	46-55	16	2.8
	Above 55	40	7.0
	Total	573	100
Gender	Male	394	68.8
	Female	179	31.2
	Total	573	100
Marital status	Married	460	80.3
	Single	113	19.7
	Total	573	100
Place of residence	Urban	334	58.3
	Semi Urban	239	41.7
	Total	573	100
Qualification	School level	34	5.9
	Degree	393	68.6
	Professional and others	146	25.5
	Total	573	100
Occupation	Private sector	402	70.2
	Government sector	18	3.1
	Business	153	26.8
	Total	573	100
Monthly Income (Rs.)	Below 20,000	35	6.1
	20,001-30,000	67	11.7
	30,001-40,000	272	47.5
	40,001-50,000	152	26.5
	Above 50,000	47	8.2
	Total	573	100

Source: Primary data

Bartel and Sicherman (1998) indicated the educated individuals will respond quickly than less educated individuals, and will adopt internet banking relatively quicker, likes reduction of the time needed for money transactions. The effect of education on adopting internet banking also depends on the age of the customer.

The present study also confirms the results of Kim and Woods, 2005 i.e graduates are more in number to adopt the internet banking and they constitute 68.6 percent. The respondents with school level education constitute only 5.9 percent. Interestingly, it is noted that professional category customers use very little of internet banking. After combining other categories of customers like post graduates with professionals, the percentage came to 25.5.

It is assumed that customers with managerial, professional, and technical jobs are included in the private sector category because the probability of using computers or the internet is frequently from their place of work, and they basically have more ability of using a computer or the internet than other categories. The table shows that 70 percent of the customers employed in the private sector to adopt internet banking; the respondents engaged in business make only 26.8 percent and respondents from government sector make a very less percent. They probably have less chance to access computers or the internet from their place of work, so their capability to use computers or the internet might be relatively weaker than the first category. This means that those who are in good position and access to the internet are more likely to adopt internet banking. These results coincide with those of Karjaluoto *et al*, (2002) and Mattila *et al*, (2003).

The monthly income of the respondents chosen varies from Rs.20,000 to Rs.50,000 and above. The respondents in the income group of Rs. 30,001 to Rs. 40,000 adopt internet banking more than others (Table 1). The study confirms the results of Choudrie and Dwivedi (2005) that the economic status i.e, income of an individual influences his ability to own and use a technology. The results differ from the report by a Team next big what in 2011, where it said users with income above the 5laks only drive usage of internet banking and it confirmed the online banking category has grown by over 35 percent over the 2010. The result of the table testifies the statement of (Venkatesh and Morris, 2000) that older individuals between 26 and 45 years of age are overrepresented in categories of higher income, higher occupational positions and higher educational qualifications.

Relationship between Demographic Variables and BI

Descriptive statistics were used in this study to summarize the data collected with the questionnaire. After the analysis using descriptive statistics, a test of Pearson moment correlation was conducted to measure the relationship between the variables in the study was said by Fisher, 2010. Pearson moment correlation is a “statistical test that assesses the strength of the relationship between two numerical data variables” found in Saunders *et al*, 2009. It is therefore necessary to apply this test in this study to see the strength of the relationship between the different variables.

H01: There is no significant relationship between demographic profile and BI of private sector bank customers adopting internet banking based on UTAUT model.

To find out the relationship between demographic profile and BI, correlation is applied. As discussed earlier, BI is explained

in terms of UTAUT factors. The results are shown in the following tables.

Table 2: Correlation between demographic profile and BI

UTAUT Model	No.	Calculated Value of 'r'	Table Value of 'r'	Remarks at 5% Level
PE	573	.314	.062	Significant
EE		.378		Significant
SI		.482		Significant
FC		.455		Significant
TR		.243		Significant

Source: Compiled

It is inferred from Table 2 that the calculated value is greater than that of table value and there is a significant relationship between demographic variables and BI of the private sector bank customers adopting internet banking based on UTAUT model. The highest value is given in SI and it is considered to have a significant relationship with demographic variables. The variables in SI are influence of family, friends, working environment support and prestige and they have a significant relationship in the adoption of internet banking. Hence the hypothesis is disproved and not accepted.

Harrison and Rainer (1992) suggest that there is a strong relationship between age and the acceptance of innovation where he found that older customers are found to hold more negative attitudes towards new technologies. Hence the first hypothesis is framed:

H01a: There is no significant relationship between age and BI to adopt internet banking.

The correlation between age and BI of private sector bank customers is done to find out which age group has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between age and BI

Age/ BI	No.	PE	EE	SI	FC	TR	Table Value of 'r'
18-25 years	48	.353*	.232	.217	.708*	.121	.273
26-35 years	417	.275*	.388*	.524*	.461*	.258*	.088
36-45 years	52	.498*	.264*	.479*	308*	.360*	.250
46-55 years	16	.462	.655*	.253	.744*	.289	.497
Above 55 years	40	.464*	.491*	.406*	.199	.125	.304

It is inferred from the above table that the calculated value is greater than that of table value and there is a significant relationship between BI and the private sector bank customers adopting internet banking based on the UTAUT model with reference to age 26-45 years. Results showed that technology is much easier to be accepted by the younger generation than the older customers. It is similar to the studies by Gattiker (1992), Vankatesh and Morris (2000) and Harrison and Reiner (1992) Hence the hypothesis is disproved and not accepted. Social influence is more relevant for older customers as re less interested in online and direct channels, as they manifest

stronger desires for social interactions, and are less receptive to use technology. For the banks, the findings will help to focus on younger generation by formulating growth strategies as they are the early adopters of technology.

Korgaonkar and Wolin, (1999) cited by Guerrero web-users were characterized as male, highly -educated, with an ordinary income, and middle - aged or young. Thus this research hypothesis is framed:

H01b: There is no significant relationship between gender and BI to adopt internet banking

The correlation between gender and BI of private sector bank customers is done to find out which gender has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between gender and BI

Gender/ BI		PE	EE	SI	FC	TR	Table Value of 'r'
	No.	Calculated value of 'r'					
Male	394	.314*	.410*	.497*	.459*	.239*	.098
Female	179	.317*	.312*	.454*	.447*	.250*	.138

Similarly, there is a significant relationship between BI and male customers and female customers adopting internet banking as the calculated value is greater than that of the table value. Hence the hypothesis is disproved and not accepted.

H01c: There is no significant relationship between marital status and BI of private sector bank customers to adopt internet banking based on UTAUT model.

The correlation between marital status and BI of private sector bank customers is done to find out which marital status has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between marital status and BI

Marital status/ BI		PE	EE	SI	FC	TR	Table Value of 'r'
	No.	Calculated value of 'r'					
Married	460	.345*	.366*	.496*	.428*	.260*	.088
Single	113	.214*	.429*	.423*	.570*	.169	.174

There is a significant relationship between BI and the married customers adopting internet banking based on the UTAUT model as the calculated value is greater than that of the table value except in trust with reference to single customers. Hence the hypothesis is disproved and not accepted.

H01d: There is no significant relationship between place of residence and BI of private sector bank customers to adopt internet banking based on UTAUT model

The correlation between place of residence and BI of private sector bank customers is done to find out which place of residence has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between the place of residence and BI

Place of residence/ BI		PE	EE	SI	FC	TR	Table Value of 'r'
	No.	Calculated value of 'r'					
Urban	334	.311*	.418*	.479*	.475*	.228*	.098
Semi urban	239	.318*	.322*	.486*	.428*	.264*	.113

There is a significant relationship between BI and urban and semi urban living customers adopting internet banking based on the UTAUT model as the calculated value is greater than that of the table value. Hence hypothesis is disproved and not accepted.

Burke, (2002) suggests that education is positively related to an individual's level of literacy level. People who buy financial services over the internet have higher incomes and greater technology use than those who do not. Hence the following hypothesis is framed:

H01e: There is no significant relationship between educational level and BI to adopt internet banking

The correlation between educational level and BI of private sector bank customers is done to find out which educational category has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between educational level and BI

Qualification / BI		PE	EE	SI	FC	TR	Table Value of 'r'
	No.	Calculated value of 'r'					
School level	34	.226	.419*	.623*	.542*	.387*	.325
Degree	393	.333*	.391*	.497*	.424*	.208*	.098
Professionals and others	146	.270*	.344*	.408*	.524*	.318*	.098

There is a significant relationship between BI and educational level of customers, except in PE with reference to school level education as the calculated value is greater than that of the table value. Hence the hypothesis is disproved and not accepted. This result is similar to Burke (2000), Trocchia and Janda (2000) who established a positive relationship between educational level and internet banking adoption.

Previous studies (Karjatuolo *et al* 2002, Mattila *et al* 2003, Sathye, 1999) showed that those who are in the upper and middle class and high level occupations are more likely to use internet banking than other customers. Hence the following hypothesis is framed:

H01f: There is no significant relationship between occupation and BI of private sector bank customers to adopt internet banking based on UTAUT model

The correlation between occupation and BI of private sector bank customers is done to find out which occupational category has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between occupation and BI

Occupation/ BI		PE	EE	SI	FC	TR	Table Value of 'r'
	No.	Calculated value of 'r'					
Private sector	402	.324*	.321*	.521*	.459*	.264*	.098
Government	18	.578*	.698*	.345*	.621*	.239*	.098
Business	153	.270*	.344*	.408*	.524*	.318*	.159

There is a significant relationship between BI and occupation of the customers as the calculated value is greater than that of the table value. Hence the hypothesis is disproved and not accepted. These results concur with those of Karjaluo *et al* (2002) and Mattila *et al* (2003).

The customers between 26 and 45 years of age are overrepresented in categories of higher income, higher

occupational positions and higher educational qualifications (Venkatesh and Morris, 2000). Rogers (2003) showed that demographic attributes play an important role in predicting adoption and that economic status (income) is highly correlated to initial adoption. Choudrie and Dwivedi (2005) confirmed that the economic status for individuals influences their ability to use a technology.

H01g: There is no significant relationship between monthly income and BI to adopt internet banking.

The correlation between monthly income and BI of private sector bank customers is done to find out which monthly income category has more relationship in the adoption of internet banking in Tamil Nadu.

Correlation between monthly income and BI

Monthly Income/ BI	No.	PE	EE	SI	FC	TR	Table Value of 'r'
		Calculated value of 'r'					
Below Rs. 20,000	35	.166	.461*	.513*	.594*	.222	.325
Rs. 20,001-30,000	67	.115	.406*	.557*	.442*	.380*	.233
Rs. 30,001-40,000	272	.403*	.305*	.505*	.441*	.203*	.113
Rs. 40,001-50,000	152	.214*	.408*	.470*	.477*	.350*	.159
Above Rs. 50,000	47	.497*	.587*	.311*	.384*	.030	.288

There is a significant relationship between BI and monthly income except in PE and trust with reference to income below Rs. 20,000 in PE with reference to income Rs. 20,001-30,000; in trust with reference to income above Rs. 50,000.

The analysis shows that there is a significant relationship between demographic variables and BI of the private sector bank customers in adopting internet banking based on UTAUT model. Hence, hypothesis is disproved and not accepted. The study is not similar to the literature already existing, as Sathye (1999) could not find correlations between demographic variables and the use of internet banking services.

Findings and suggestions

Correlation is done to find out the relationship between demographic variables and BI. It is found the highest value is given to SI and it is considered to have a significant relationship with demographic variables than other factors. The variables in SI are influence of family, friends, working environment support and prestige. The lowest value is given to a trust, which also has a significant relationship with the adoption of internet banking. Hence there is a significant relationship between BI and the private sector bank customers adopting internet banking based on UTAUT model. It is suggested that the banks should concentrate on the demographic variables as they have influence on the adoption of internet banking.

Conclusion

In India, the banking customers have started to accept internet banking nowadays. Banks should make internet banking more universally accessible to customers. Internet banking will be successful for banks only when they have commitment along with a deeper understanding of customer needs. Banks should

concentrate on the above lines in order to have effective internet banking practices.

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