# Demographic Influences on Technology Adoption Behavior : A Study of E - Banking Services in India

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## Abstract

**In this era of advanced and innovative technological development, every financial institution is trying to take advantage of the advanced technology and wants to adopt it to improve its services for its clients. Similarly, the banking industry has been focusing upon developing innovative Internet/e- banking delivery channels and services. The purpose of the present study was to examine the impact of demographic characteristics such as age, gender, monthly family income, marital status, educational qualification, and Internet usage experience on the adoption behavior of e-banking in India. The study adopted basic constructs of the technology acceptance model (TAM) such as perceived usefulness, perceived ease of use, intention to use, and attitude and included additional factors such as social norms and perceived risk to measure e-banking adoption behavior. The study also performed a factor wise analysis to provide a more effective conclusion. The results showed that with the exception of marital status, all the demographic variables had a significant effect on adoption of e-banking, and it was also revealed that only age had a significant effect on all the measured factors. The results provide implications for bank managers to adopt appropriate strategies to encourage e-banking adoption among the consumers having different demographic characteristics in India.**

***Keywords :*** **Internet banking, e-banking, technology adoption behavior, ANOVA**

**JEL Classification: M3, M30, M31**

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In this era of technology development and innovations, information and communication technology (ICT) have changed the scenario of the financial services industry. Now, every service has become advanced as well as consumer friendly with the help of innovative ICT development, and now, these services are known as electronic (E) finance, E-banking, E-commerce, E-money, E-trading, E-insurance, and so forth. This development of ICT has had an enormous effect on the development of the banking industry (Riffai, Grant, & Edgar, 2011). The implementation of information technology in the Indian banking industry started in the early 1990s after recommendations of Dr. C. Rangarajan Committee in 1984 and 1989 for large scale induction of IT in the banking sector. Use of technology in the banking sector accelerated after the enactment of the IT Act, 2000 by

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the Government of India, which provides legal recognition to electronic transactions.

Internet/E-banking has emerged as an important factor in the future development of the banking industry (Xue, Hitt, & Chen, 2011), and most of the banks are adopting it as a delivery channel and as a strategic tool for business development (Safeena, Kammani, & Date, 2014). Now, there is an explosion of electronic banking services (Liao & Cheung, 2003) and it has created huge competition among banking service providers (Beckett, Hewer, & Howcroft, 2000). So, there is a strong need to study the e - banking adoption behavior of consumers, factors which may affect consumer behavior, and also, there is a need to identify the demographic influences which may influence consumers' e - banking adoption behavior so that banks can better formulate marketing strategies to increase e - banking usage and compete in the market.

E - banking provides various benefits to both banks and customers (Chauhan & Choudhary, 2015). By offering e - banking services, banks can take advantage of lower operating costs because it requires less staff and no requirements of physical branches. Customers can also take benefit from the convenience, speed, and 24x7 availability of these services. Despite these benefits, the adoption rate of e - banking in India is quite low and not as expected. Hence, there is a need to understand the consumers' behavior towards usage of e - banking services.

Various studies have been conducted in developed countries on consumer intention to adopt e - banking services, factors affecting their adoption behavior, and demographic studies in the e - banking context (Beckett, Hewer, & Howcroft, 2000 ; Branca, 2008 ; Liao & Cheung, 2003 ; Nasri & Charfeddine, 2012 ; Riffai et al., 2011 ; Riquelme & Rios, 2010 ; Yousafzai, Foxall, & Pallister, 2010) ; whereas, in India, we found a small number of studies related to the adoption behavior and factors affecting e - banking, however, there is negligible availability of demographic studies in the e - banking context in India. The present study attempts to understand the effect of different consumers' demography on the e - banking adoption behavior. In this study, we use the term e - banking as it is widely accepted and used for electronic banking. The term e - banking includes various electronic delivery channels such as Internet banking, mobile banking, ATM banking, and phone banking.

The study uses basic constructs of the technology acceptance model (TAM) such as perceived usefulness, perceived ease of use, attitude, and intention to use with included additional factors such as social norms and perceived risk to measure adoption behavior and attempts to identify demographic influences on this adoption behavior overall as well as factor wise.

## Review of Literature

**(1) TAM and Other Factors :** The technology acceptance model (TAM) was originally proposed by Davis in the year 1986 ; further, Davis (1989) and Davis, Bagozzi, and Warshaw (1989) introduced it as a model to predict behavioral intentions to adopt computer technology and information. According to this model, individuals' attitude and behavioral intention to use technology or a system depends on the perceived usefulness (PU) and the perceived ease of use (PEOU). TAM is widely accepted as the most suitable theory in computers and technology related behavior (Cheng, Lam, & Yeung, 2006 ; Lee, Lee, & Eastwood, 2003 ; Park, 2009 ; Venkatesh, Morris, Davis, & Davis, 2003). It is also widely adopted by various researchers in their studies to investigate the factors that influence the acceptance of technological innovations and adoption intentions.

**(i) Perceived Usefulness (PU) :** According to Davis et al. (1989), perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance. It is a positive perception after use, and it refers to the perceived benefit (Kai-ming & Enderwick, 2000). The probability of use of technology increases if a user feels benefited after use (Davis et al., 1989).Various previous researches have acknowledged the importance of PU in adoption of information systems and technological innovations (Cheng et al., 2006 ; Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004 ; Park, 2009 ; Raida & Neji, 2013).

**(ii) Perceived Ease of Use (PEOU) :** PEOU refers to the degree to which the users perceived that using this electronic banking would be free of effort, that is, the ease of learning and using (Davis et al., 1989). There are various research studies which have found a strong influence of perceived ease of use on technology adoption (Davis, 1989 ; Venkatesh, 2000 ; Wang, Wang, Lin, & Tang, 2003).

**(iii) Social Norms (SN) :** Social norms refer to the perception of a person that develops under the influence of people who are important to her or him (Nysveen, Pedersen, & Thorbjornsen, 2005). Consumers' perceptions may be affected by their socially related members (family members, friends, and colleagues) ; so, the social or subjective norms are defined as opinion of other people & influence of superiors and peers (Nasri & Charfeddine, 2012). Many researchers found a significant effect of social norms on adoption behavior (Amin, 2009 ; Nysveen et al., 2005 ; Riquelme & Rios, 2010 ; Venkatesh & Morris, 2000).

**(iv) Perceived Risk (PR) :** In the Internet and e-banking context, privacy and security risks play an important role (Howcroft, Hamilton, & Hewer, 2002 ; Liao & Cheung, 2003). Privacy risks are related to the possibility of theft of private information (Pavlou, 2003), and security risks are related to the context of confidentiality of the service (Ozdemir, Trott, & Hoecht, 2008).

**(2) Consumers' Demography, E - Banking Adoption, and Hypotheses Development**

**(i) Age :** Age has a significant effect on e - banking adoption. Various studies found that age is a strong factor that can influence e - banking adoption (Ramayah & Koay, 2002; Kolodinsky, Hogarth, & Hilgert, 2004 ; Khan & Emmambokus, 2011; Zarafat, Sharif, & Ming, 2013). Ramayah and Koay (2002) reported that the adoption of e - banking was negatively influenced by age - old consumers have more difficulties to adopt these services ; whereas, young consumers easily adopt these because of their perceived benefits (Sylvie & Xiaogan, 2005) and they are even attracted towards innovative technologies like Internet banking (Kerem, 2002). However, there are various studies that found no significant relationship between age and e - banking adoption (Karjaluoto, Mattila, & Pento, 2002 ; Lichtenstein & Williamson, 2006 ; Suganthi, Balanchander, & Balanchandran, 2001; Zheng & Zhong, 2005). Based on the above discussion, we hypothesize :

↳ **Hypothesis 1:** There is a significant difference in e - banking adoption behavior among consumers of various age groups.

**(ii) Gender :** This is an era of equality, and there should be no gender discrimination between girls and boys in the society. Even research conducted in some of the developed countries reported that gender is continuously becoming quite less significant in terms of Internet banking adoption (Ilett, 2005). But in a developing country like India, still, differences exist socially and culturally, and hence, differences may exist in their behavior or attitude to adopt new technologies and e - banking services. This assumption is supported by Kuchar (2012), who suggested that gender is an influential factor for e - banking adoption in India. Branca (2008) reported that gender has a significant effect on usage frequency of Internet based banking delivery channels ; men were more frequent users then women consumers. In support of this, Kolodinsky et al. (2004) found higher adoption rate of e - banking services among men, but Ilett (2005) refused these outcomes by finding an equal number of male and female consumers using Internet banking in the U.K.

↳ **Hypothesis 2 :** There is a significant difference in e - banking adoption behavior between male and female consumers.

**(iii) Income :** Previous research studies found that income is a significant influential factor for the adoption of innovation and new technology (Lee & Lee, 2000 ; Lee, Lee, & Schumann, 2002; Karjaluoto et al., 2002). In terms of Internet/e- banking, Kolodinsky et al. (2004) found a positive relationship between income and intention to adopt electronic banking technology, and the study revealed that increase in income led to higher adoption rate. This may be because of a general phenomenon; if anyone has higher income, they may have a personal computer, mobile, and Internet connection ; thus, such people have more potential to use Internet banking (Padachi, Rojid, & Seetanah, 2008). Thus, we hypothesize that :

↳ **Hypothesis 3 :** There is a significant difference in e - banking adoption behavior among consumers belonging to various monthly family income groups .

**(iv) Education :** Many studies have confirmed the effect of educational level on e - banking adoption, but there are various studies that opposed this confirmation. Padachi et al. (2008) reported greater probability of e - banking adoption by higher educated consumers. The educational level directly affects the perceived ease of use and perceived usefulness (Chung & Paynter, 2002). According to Mattila, Karjaluoto, and Pento (2003), the usage of e - banking services was significantly affected by level of education. However, Lassar, Manolis, and Lassar (2005) found no significant relationship between educational level and the e- banking adoption process. Hence, we hypothesize :

↳ **Hypothesis 4 :** There is a significant difference in e - banking adoption behavior among consumers of various educational levels.

**(v) Marital Status :** Marital status seems to be a least included demographic factor in studies on Internet/e banking adoption in India, but this factor is included in the light of the phenomenon which are supported by various researchers that single people are freer to take decisions and have more ability to take risks than married persons (Chang, 2005 ; Roszkowski, Snelbecker, & Leimberg , 1993; Sung & Hanna, 1996). In support of this, Izogo, Nnaemeka, Onuoha, and Ezema (2012) found that the usage of e-banking channels was greater by single persons than by the persons who were married. But many of the studies refused this phenomenon and reported that the married couples were more likely to adopt e - banking services than singles (Kolodinsky et al., 2004 ; Onyia & Tagg, 2011).

↳ **Hypothesis 5 :** There is a significant difference in e - banking adoption behavior among single and married consumers.

**(vi) Internet Experience :** In today's scenario, the Internet has become one of the most important parts of life. We can categorize the consumers on the basis of the Internet experience they have, like less experienced in using the Internet, expert in using the Internet, and moderately experienced in the usage of the Internet . Hence, we added it as an additional demographic characteristic of the consumers. Abbad (2013) found that the experience of using the Internet is one of the most important factors that may affect the consumers' adoption of e - banking. So, we hypothesize as :

↳ **Hypothesis 6 :** There is a significant difference in e - banking adoption behavior among different levels of Internet experienced consumers.

## Research Methodology

### (1) Sampling Design

**Target Population :** The target population for the study is defined as follows:-

**(i) Element :** Existing bank customers who were users and non - users of e-banking services (with different demographic characteristics).

**(ii) Sampling Unit :** Various educational institutes (management and engineering) of Indore (Madhya Pradesh).

**Table 1. Constructs with Items and their Sources of Adoption**

| Construct with items | Code | Sources |
|---|---|---|
| **Perceived Usefulness** | **PU** | Wang et al. (2003) |
| E-banking would enhance my effectiveness in conducting banking transactions. | PU1 | & Amin (2009) |
| E-banking would improve my performance in conducting banking transactions. | Pu2 | |
| E-banking makes it easier for me to conduct banking transactions. | Pu3 | |
| **Perceived Ease of Use** | **PEOU** | Venkatesh & Davis (2000) & |
| My interaction with E-banking services is clear and understandable. | PEOU1 | Pikkarainen et al. (2004) |
| Using E-banking services does not require a lot of my mental effort. | PEOU2 | |
| In my opinion, E-banking is easy to use. | PEOU3 | |
| **Intention to Use** | **IU** | Suh, B. & Han, I. (2002) and |
| I intend to continue using E-banking services in the future. | IU1 | Nysveen et al. (2005) |
| I will think about using E-banking services. | Iu2 | |
| I will use E-banking services in the future. | Iu3 | |
| I strongly recommend others to use E-banking services. | Iu4 | |
| **Social Norms** | **SN** | |
| If I use E-banking services, most of the people who are important to me regard me as smart. | SN1 | Nasri and |
| If I use E-banking services, most of the people who are important to me would appreciate me. | SN2 | Charfeddine (2012) |
| E-banking services used by me influence my friends and relatives. | Sn3 | |
| **Attitude** | **ATT** | Pikkarainen et al. (2004) & |
| I feel using E-banking services is fun. | ATT1 | Amin (2009) |
| I feel using E-banking services is pleasant. | ATT2 | |
| I feel using E-banking services is a good idea. | ATT3 | |
| In my opinion, it is desirable to use E-banking services. | ATT4 | |
| **Perceived Risk** | **PR** | Ozdemir et al. (2008) |
| In my opinion, E-banking services are not secure.* | PR1 | |
| In my opinion, there is a risk of fraud while using E-banking services.* | PR2 | |
| I am afraid to reveal my personal information while using E-banking services.* | PR3 | |
| I am afraid that the third parties may access my account information when I use E-banking services.* | PR4 | |

*Reverse coded items.

**(iii) Extent :** Indore city, Madhya Pradesh.

**(iv) Sample Size and Time Period of the Study :** 211 responses were collected for the study. The time period of the study is from July 2013 to July 2015.

**(v) Sampling Frame :** To effectively reach the target population, we used professional or personal e-mail ids of faculties and students . The email ids were gathered from institutes' websites and social media.

**(vi) Sampling Technique :** A non probability convenience sampling technique was adopted for the study.

**(vii) Execution :** We approached various management and engineering colleges' websites and were successful in collecting 1000 professional or personal email ids of faculties and students. Next, a web based questionnaire was mailed to these email ids and 211 filled, usable questionnaires were returned. The response rate (21 %) was very low as (may be) the students and faculty members were not comfortable in answering a questionnaire emailed to them (that asked for personal information and demographic characteristics).

**(2) Data Collection :** Primary data were collected through a structured questionnaire which was divided into two sections ; the first section dealt with personal information or demographic characteristics ; and the second section dealt with questions related to adoption behavior which was designed by adopting items from extent literature. All the items were measured on a 5-point Likert scale, ranging from *strongly disagree (1)* to *strongly agree (5)*. The second section consisted of four basic constructs of TAM, that is, perceived usefulness (3 items), perceived ease of use (3 items), attitude (4 items), and intention to use (4 items) with two additional constructs, that is, social norms (3 items) and perceived risk (4 items) (see Table 1).

## Data Analysis and Results

**(1) Construct Reliability and Validity :** Prior to data analysis, the construct reliabilities and validities were ensured through the following criteria. The reliability of the constructs was measured using Cronbach's alpha which was found ranging from 0.761 to 0.930, which is higher than 0.7 for every construct, which means that it is a good consistency (Hair, Anderson, Tatham, & Black, 1998) (see Table 2). Further, squared multiple correlation was used to test validity, the value of it ranging from 0.34 to 0.9 for all items which are above the minimum criteria (Bagozzi & Yi, 1988). Thus, our dataset was found to be both reliable and valid (see Table 2).

**(2) One Way ANOVA :** To measure demographic differences towards consumers' adoption behavior of e - banking, the one way ANOVA (at 5% level of significance) was computed on whole data and for testing the hypotheses (see Table 4). We also applied the one way ANOVA factor wise to determine whether the demographic differences exist among the measured factors such as PU, PEOU, IU, SN, ATT, and PR, which helps us to achieve our objective more effectively (see Table 5). Before performing ANOVA, we had to test the following three assumptions :

**(i) Assumption of Independence :** Our sampling design confirms that the sample was collected purely on a random basis so that every individual in the population got an equal chance of being selected ; so, the groups (categories) are independent of each other. Hence, the assumption of independence has been met.

**(ii) Assumption of Normality :** To test the normality, we considered skewness and kurtosis Index. The *Z*- score of skewness and kurtosis is 2.83 and 2.42, respectively which shows considerable deviation of normality because

**Table 2. Reliability and Validity Statistics**

| Constructs | Items | Cronbach's Alpha | Squared multiple correlation |
|---|---|---|---|
| Perceived usefulness (PU) | PU1 | | .900 |
| | PU2 | 0.930 | .880 |
| | PU3 | | .855 |
| Perceived ease of use (PEOU) | PEOU1 | | .723 |
| | PEOU2 | 0.797 | .556 |
| | PEOU3 | | .674 |
| Intention to use (IU) | IU1 | | .881 |
| | IU2 | 0.761 | .344 |
| | IU3 | | .807 |
| | IU4 | | .796 |
| Social norms (SN) | SN1 | | .630 |
| | SN2 | 0.752 | .708 |
| | SN3 | | .619 |
| Attitude (ATT) | ATT1 | | .570 |
| | ATT2 | 0.832 | .760 |
| | ATT3 | | .728 |
| | ATT4 | | .766 |
| Perceived risk (PR) | PR1 | | .464 |
| | PR2 | | .603 |
| | PR3 | 0.850 | .710 |
| | PR4 | | .722 |

**Table 3. Test of Homogeneity of Variances**

| Demographic characteristics | Levene's Statistic | Sig. value |
|---|---|---|
| Age | 1.358 | .260 |
| Gender | 1.236 | .268 |
| Monthly family income | .484 | .617 |
| Education | 6.542 **(Welch statistic- 7.892)** | .002 **(Welch sig.- .001)** |
| Marital status | .485 | .487 |
| Internet Usage Experience | .873 | .419 |

deviation from normality is not severe as the value of skewness and kurtosis index below 3 and 10 respectively (Kline, 2011).

**(iii) Assumption of Equality of Variance :** To ensure the assumption of equality of variance among all the demographic variables, we performed the Levene's test and the sig. *(p)* value is greater than 0.05 for age, gender, monthly family income, marital status, and Internet experience. It means that the assumption of equality of variance for these demographic characteristics is met, but for the variable - educational level, it is not met. However, the Welch test permitted us to proceed and compare the group means as it was found to be significant (< 0.05) (see Table 3).

**Table 4. Demographic Profile of Consumers : Results of One Way ANOVA on Whole Data**

| Demographic variable | Freq. | Per. % | ANOVA Results - Overall | | |
|---|---|---|---|---|---|
| **Age** | | | ***M*** | ***F*** | ***Sig.*** |
| 18-30 years | 112 | 53.1 | 3.59 | 21.84 | **.000** |
| 31-50 years | 75 | 35.5 | 3.67 | | |
| 51 & above years | 24 | 11.4 | 2.8 | | |
| **Gender** | | | | | |
| Male | 124 | 58.8 | 3.64 | 8.98 | **.003** |
| Female | 87 | 41.2 | 3.38 | | |
| **Family income** (₹) | | | | | |
| <50000 | 85 | 40.3 | 3.44 | 4.31 | **.015** |
| 50000-100000 | 69 | 32.7 | 3.71 | | |
| >100000 | 57 | 27 | 3.45 | | |
| **Education** | | | | | |
| Graduate | 71 | 33.6 | 3.29 | 8.73 | **.000** |
| Post graduate | 78 | 37 | 3.7 | | |
| Above PG | 62 | 29.4 | 3.59 | | |
| **Marital status** | | | | | |
| Single | 109 | 51.7 | 3.48 | 1.28 | **.258** |
| Married | 102 | 48.3 | 3.58 | | |
| **Internet Usage Experience** | | | | | |
| <5 Years | 21 | 10 | 2.91 | 16.62 | **.000** |
| 5-10 Years | 94 | 44.5 | 3.49 | | |
| >10 Years | 96 | 45.5 | 4.71 | | |

## Discussion

When we applied ANOVA on the whole data with the variables : age, gender, marital status, monthly family income, educational level, and Internet usage experience, it is found that the significance values are .000, .003, .258, .015, .000 and .000, respectively, which means that all the measured demographic variables are found to be significant ($p$ <0.05), except for marital status, which is found to be not significant ($p$ >0.05). This implies that that there is a significant difference that exists towards e - banking adoption behavior among consumers of various age groups, male and female consumers, consumers in different monthly income groups, having different educational levels, and having different levels of expertise in using the Internet. There is no significant difference towards e - banking adoption behavior in single and married consumers.

Among all the variables, age is found to be highly significant with e-banking adoption behavior (Sig. value .000 with $F$ value = 21. 84) followed by Internet experience (Sig. value .000 with $F$ value = 16.62). The E-banking acceptance is found to be high in the middle-aged and young (18-30 years) consumers (31-50 years) ; whereas, old aged (51 & above) consumers refused to accept it ($M$=2.80). This finding contradicts the findings of various previous studies because old aged consumers were found to have more difficulties to adopt these services (Vijayan, Vignesen, & Bala, 2005), and they are more conservative than young consumers (Kennett, Moschis, & Bellenger, 1995).

According to factor wise analysis, age is found to have significant differences with all the measured factors

**Table 5. Results of One Way ANOVA : Factor Wise**

| Demographic variable | PU | | | PEOU | | | IU | | | SN | | | ATT | | | PR | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Age** | ***M*** | ***F*** | ***Sig.*** | ***M*** | ***F*** | ***Sig.*** | ***M*** | ***F*** | ***Sig.*** | ***M*** | ***F*** | ***Sig.*** | ***M*** | ***F*** | ***Sig.*** | ***M*** | ***F*** | ***Sig.*** |
| 18-30 years | 3.92 | 27.98 | **.000** | 3.79 | 11.04 | **.000** | 3.99 | 8.01 | **.000** | 3.33 | 3.89 | **.022** | 3.74 | 5.67 | **.004** | 2.89 | 16.86 | **.000** |
| 30-50 years | 4.13 | | | 3.83 | | | 3.95 | | | 3.40 | | | 3.86 | | | 2.96 | | |
| 50 & above yrs | 2.5 | | | 2.97 | | | 3.31 | | | 2.86 | | | 3.27 | | | 1.88 | | |
| **Gender** | | | | | | | | | | | | | | | | | | |
| Male | 3.99 | 6.79 | **.010** | 3.85 | 8.43 | **.004** | 3.97 | 2.14 | **.145** | 3.49 | 1.296 | **.000** | 3.79 | 1.848 | **.175** | 2.89 | 2.69 | **.102** |
| Female | 3.63 | | | 3.51 | | | 3.8 | | | 3.04 | | | 3.64 | | | 2.68 | | |
| **Family income (₹)** | | | | | | | | | | | | | | | | | | |
| <50000 | 3.69 | 1.6 | **.204** | 3.61 | 1.01 | **.366** | 3.85 | 2.01 | **.137** | 3.20 | 9.112 | **.000** | 3.65 | 4.317 | **.015** | 2.73 | 1.55 | **.215** |
| 50000-100000 | 3.97 | | | 3.8 | | | 4.05 | | | 3.64 | | | 3.94 | | | 2.96 | | |
| >100000 | 3.9 | | | 3.75 | | | 3.79 | | | 3.05 | | | 3.58 | | | 2.73 | | |
| **Education** | | | | | | | | | | | | | | | | | | |
| Graduate | 3.33 | 16.28 | **.000** | 3.48 | 4.05 | **.019** | 3.62 | 7.80 | **.001** | 3.13 | 2.355 | **.097** | 3.65 | 0.708 | **.494** | 2.61 | 4.16 | **.017** |
| Post graduate | 4.16 | | | 3.81 | | | 4.11 | | | 3.41 | | | 3.79 | | | 3.02 | | |
| Above PG | 4.03 | | | 3.85 | | | 3.95 | | | 3.38 | | | 3.73 | | | 2.76 | | |
| **Marital status** | | | | | | | | | | | | | | | | | | |
| Single | 3.72 | 2.78 | **.097** | 3.62 | 2.84 | **.093** | 3.87 | .28 | **.593** | 3.29 | .002 | **.969** | 3.63 | 3.229 | **.074** | 2.84 | .307 | **.580** |
| Married | 3.95 | | | 3.82 | | | 3.93 | | | 3.30 | | | 3.82 | | | 2.77 | | |
| **Internet Usage Experience** | | | | | | | | | | | | | | | | | | |
| <5 Years | 2.76 | 17.99 | **.000** | 3.14 | 8.34 | **.000** | 2.94 | 20.83 | **.000** | 3.02 | 1.345 | **.263** | 3.24 | 8.010 | **.000** | 2.44 | 6.55 | **.002** |
| 5-10 Years | 3.81 | | | 3.63 | | | 3.95 | | | 3.33 | | | 3.65 | | | 2.65 | | |
| >10 Years | 4.10 | | | 3.92 | | | 4.06 | | | 3.35 | | | 3.91 | | | 3.03 | | |

($p_{PU}$, $p_{PEOU}$, $p_{IU}$, $p_{SN}$, $p_{ATT}$, $p_{PR} < 0.05$). It means that the perception of the consumers about these factors differs with the different age groups. Middle aged consumers highly perceived e - banking as useful and easy to use ; where as, old aged consumers did not find it useful and easy to use and they perceived high risks associated with e - banking. This finding is supported by Vijayan et al. (2005) and Kolodinsky et al. (2004).

Both the genders have accepted e - banking in India, but the men are still a little ahead than women because men perceived e - banking to be more useful and easy to use than women did (Branca, 2008; Kuchar, 2012). However, there is no difference between men and women about the attitude towards e - banking ($p > 0.05$).

Monthly family income is found to have a comparatively lesser impact ($F = 4.31$, sig = .015) on acceptance of e-banking because it is found to have significant differences with only two factors such as social norms ($p < 0.05$) and attitude towards e - banking ($p < 0.05$). According to the resultant mean values among the three income groups, consumers whose average monthly income was ₹ 50,000 - ₹ 1,00,000 were found to have higher acceptance of e-banking services than lower (< ₹ 50,000) and higher monthly income group (> ₹ 1,00,000) consumers. This may be due to higher positive social influences and attitude towards e - banking. This outcome is partly similar to the results obtained by Howcroft et al. (2002), Rogers (2003), Babiarz and DeVaney (2007) as the findings indicate that higher income consumers have lesser acceptance of e-banking because they have greater preference for branch banking. However, it contradicts with the results obtained by the above-mentioned studies as the authors found a negative relationship between income and acceptance of e-banking. It is also contradicts

with the results obtained by Padachi et al. (2008) and Kolodinsky et al. (2004) as they found higher income group consumers to have higher positive behavior towards e - banking.

Educational level affects e- banking acceptance moderately ($F = 8.73$, sig =.000). Graduate consumers were found to have less acceptance of e - banking, but this does not mean that the higher educated (above post graduation) consumers had high acceptance because the post graduate consumers were found to have the greatest acceptance of e-banking services. This finding is supported by a study which found the level of education to have a significant impact on acceptance of e-banking (Premalatha, 2014), but contradicts with studies which confirmed a positive relationship between level of education and acceptance of e - banking (Burke, 2002 ; Mattila, et al., 2003; Laforet & Li, 2005; Yuan, Lee, & Kim, 2010). The factor wise analysis observes a significant difference in the behavior of consumers with different education levels towards PU, PEOU, IU, and PR. Middle level educated consumers highly perceived e-banking as useful and easy to use ; in addition, they had a high intention to use e - banking with less perceived risk than others.

Through the analysis, we find that there is no significant difference (Sig =.258) in the behavior of single and married consumers to accept e - banking in India. This finding is supported by Premalatha (2014) and is contradictory to the results obtained by Mattila et al. (2003) and Gan, Clemes, Limsombunchai, and Weng (2006).

We find a positive association between Internet expertise and e - banking acceptance. It means e- banking acceptance increases with increasing expertise in using the Internet. It may be due to Internet banking attitude, and the actual behavior may be influenced by prior experience of computer and technology ; especially, the Internet (Karjaluoto et al., 2002). Consumers with less Internet experience (<5 Years) refused to accept e - banking in India because they perceived it to be not useful. Consumers who had more experience (>10 years) of using the Internet perceived e - banking as highly useful, easy to use, and had a high positive attitude towards it. It was also found that with increasing experience of using the Internet, perceived risk about e - banking reduces. This finding is supported by Abbad (2013).

## Managerial Implications

This study provides implications which will help bank managers or decision makers for taking decisions related to marketing of e- banking services in India. The study mainly provides implications related to two strategies of marketing ; first is target market and segmentation, and the second is marketing communications.

Various prior studies showed that the younger aged consumers have higher adoption behavior of e - banking, but this study contradicts it and gives the suggestions that the bank managers need to shift their focus on well educated middle-aged bank consumers. They should also focus upon the middle income group consumers because they have a more positive adoption behavior than high income group consumers. The analysis shows a positive relationship between experience of using the Internet and e - banking adoption behavior ; so, the bank marketers need to market their e- banking services in the region where Internet penetration is high.

In the perspective of marketing communications, bank officials need to communicate the usefulness and also need to show easiness of use of e - banking services among old aged consumers because they have some positive attitude and intention to use e - banking services. The security and privacy should be first priority of banks because this factor was negativity perceived by approximately all the consumers having any demographic characteristics. So, the banks need to advertise about robust security provided by them ; this may help them to reduce the risks perceived by consumers and may help to increase a positive attitude towards e - banking.

## Conclusion

Recently, e-banking and its adoption behavior has become one of the most discussed topics worldwide, but a

limited number of studies have been conducted in this regard in the Indian context. E - banking is in the neonatal stage in India, and its success highly depends on consumers' attitude towards use or their adoption behavior. The present study is an attempt to identify the demographic influences on adoption of e - banking in the Indian context. In this study, we have measured the six demographic variables such as age, gender, marital status, monthly family income, educational level, and Internet experience with e - banking adoption. The study adopted the technology acceptance model (TAM) with additional constructs, that is, social norms and perceived risk. The findings show that age, gender, monthly family income, education, and Internet experience have the potential to influence the adoption of e - banking behavior, and among these, Internet experience shows a positive relationship with it. The factor wise analysis of these demographic characteristics reveals that the age and Internet experience are the strongest influencers of e - banking adoption.

Further, the analysis provides evidence that perceived usefulness and perceived ease of use are influenced by age, gender, education, and Internet experience and are not influenced by monthly family income and marital status. Moreover, social norms are impacted by age, gender, and monthly family income and have no impact of education, marital status, and Internet experience. Attitude towards e - banking is influenced by age, monthly family income, and Internet experience, and is not impacted by education, marital status, and gender. Furthermore, intention to use and perceived risk both found the influence of age, education, and Internet experience ; whereas, gender, monthly family income, and marital status did not find influences on them.

The analysis confirms that middle aged consumers perceived e - banking to be highly useful and easy to use, had a greater positive attitude than other respondents and less perceived risk, and they also had high social influences ; however, the young consumers had high intentions to use e - banking in the future. Male consumers perceived e - banking to be more useful and easy to use than female consumers. Middle income group consumers were found to be highly socially influenced and they had more positive attitude towards e - banking. Moreover, postgraduate or middle level educated consumers highly perceived e - banking as useful and easy to use, and they had a very high intention to use with less perceived risks. Consumers who were proficient in using the Internet perceived e - banking to be highly useful and easy to use. They also had a higher positive attitude and intention to use it in the future with very less or no concern about the risks. It was also found that the perceived risk decreases with increased proficiency of using the Internet.

## Limitations of the Study and Scope for Future Research

The present study was conducted in the Indian context with limited sample size ; so, the main limitation derives from the nature of empirical results and their generalization to other samples and contexts. Secondly, the study included limited demographic variables ; so, in the future, there is a need to consider similar types of research with various socio-demographic groups such as occupation, lifestyle, race, and so forth. Another limitation derives from the measures or scale used in the study to measure the technology adoption behavior. We used limited constructs and items in it.

For further studies, researchers can use different scales and constructs or they can include some other constructs in the present scale to improve the overall measurement of technology adoption behavior. In this study, we did not separate users and non users of e - banking services. So, here, we fail to understand the attitude and behavior of non users about e - banking, which is very much necessary for the success of e-banking.

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