

The Effect of Demographic Characteristics on Mb-Loyalty: A Study of Mobile Banking Customers

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Abstract

Mb-loyalty may be considered as the behavioural intention to continue relationship with mobile banking service provider. The aim of the present paper is to empirically examine the influence of demographics characteristics (gender, age, highest completed education, occupation, and annual income) of mobile banking customers on loyalty towards mobile banking services. Data is collected from 312 mobile banking customers in Delhi and NCR region. Levene's test of homogeneity of variance, t-test, one-way analysis of variance (ANOVA), and post-hoc tests are performed on the collected data. The analysis results display the significant effect of age, education and income variables on mb-loyalty. This research is different from the others in a manner that rather than finding the effect of demographic characteristics on loyalty with the overall banking services, it focuses exclusively on the perception of mobile banking customers and finds the influence of their demographics on loyalty with mobile banking services. This research will give insights to bankers and academicians about the differences in customer loyalty that may arise by the diversity in demographic characteristics of mobile banking customers and recommends bankers to focus on demographic characteristics for creating value for customers, resulting in enhanced mb-loyalty.

Keywords: Customer Loyalty, Mobile Banking, Demographic Characteristics, Levene's Test, ANOVA, T-test, Mb-loyalty

Introduction

Mobile banking is a banking service offered by a bank or other financial institution that permits its customers to perform a variety of financial transactions from any place with the help of a mobile device (like mobile handset or tablet), and using software, commonly called mobile app, provided by the financial institution (Sikari & Hari Krishnan, 2017). Mobile banking is among the latest form of automated banking services. The automated

banking services started in India by HSBC bank by establishing ATM for the first time in 1987. Internet banking was introduced in India in 1997 by ICICI bank with the launch of 'infinity' portal. Though these electronic delivery channels were launched by private and foreign banks in order to overcome their restraint of limited branches, in the last decade public sector banks have also heavily invested in automation (Joshua, 2009; Sindwani & Goel, 2014a). Mobile banking services in India started with SMS banking in 2002. ICICI Bank was the first bank in India to introduce complete mobile banking services by name 'iMobile' in 2008. Today technology is acting as a backbone for majority of the commercial banks in India (Sindwani & Goel, 2016). Technology enabled banking services including mobile banking is advantageous for customers as well as banks. For the customers, these services provide value in the form of anytime, anywhere banking. For the banks, the benefits are in form of lesser customer load on branches and reduction in transaction cost (Sindwani & Goel, 2012a).

Banks in India are currently running many promotion campaigns for increasing the adoption rate of mobile banking. With time, acceptance of mobile banking and other electronic mode banking is growing among bank customers in India (Sindwani & Goel, 2012b). This is evident from the rise in the transactions through e-banking modes in several banks. Technology based banking is gradually replacing branch banking (Sindwani & Goel, 2015a). Today, there is hardly any difference in the products offered by the commercial banks. Therefore to get competitive advantage and enhance customer loyalty, banks are trying to compete on other parameters and technology is playing significant role in this battle (Sindwani & Goel, 2012c). The importance of customer loyalty for an organisation's survival and success in the long run is widely highlighted in literature (Hallowell,

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1996; Ganguli & Roy, 2011; Sindwani & Goel, 2014b). Researchers have found in various sectors including banking that customer demographics have an effect on customer loyalty. So, the objective of this research is to study the demographics of mobile banking customers and to empirically examine the effect of their demographic characteristics on mb-loyalty.

Literature Review

Customer Loyalty

The concept of loyalty is central to marketing research. This concept has been the focus area in a wide range of research work conducted in different sectors (Zeithaml, Berry, & Parasuraman, 1996; Oliver, 1999; Sindwani & Goel, 2015b; Amin, 2016). The diversity of these studies expresses the richness of the topic. It is crucial for the organisations to retain customers. Research has shown that acquiring new customers usually costs more than retaining existing customers. Customer behaviour is found to be more closely related to actual customer behaviour. Thus behavioural intentions prove to be helpful indicators to know whether the customer will remain with the company or defect (Zeithaml *et al.*, 1996). Singh and Sirdeshmukh (2000) defined customer loyalty as a behavioural intention to maintain an ongoing relationship with a service provider. Oliver (1999) defined customer loyalty as a deeply-held commitment to re-patronise or re-buy a preferred product consistently in the future despite situational influences and marketing efforts having the potential to cause switching behaviour. Many researchers have used service recommendation to other customers as a proxy to customer loyalty (Ganesh, Arnold, & Reynolds, 2000; Dabholkar, Shepherd, & Thorpe, 2000). In addition to recommendation, other parameters which have been used widely for measurement of customer loyalty are consideration of the company as the first choice for services (Zeithaml *et al.*, 1996) and continuing business with the same company (Zeithaml *et al.*, 1996; Ganesh *et al.*, 2000). In order to measure customer loyalty, satisfaction and other related constructs, different researchers have used different types of scales: single item and multi-item scales (Sureshchandar, Rajendran, & Anantharaman, 2002; Al-Hawari & Ward, 2006; Sindwani & Goel, 2015c). Loyalty is considered as the ultimate aim of marketing because it helps in enhancing market share and increasing profitability.

Mb-loyalty in this research does not focus on loyalty with overall banking services, but rather on the customer intention to maintain ongoing relationship with mobile banking service provider.

Demographic Characteristics and Customer Loyalty

Research suggests that demographic characteristics may have an effect on customer loyalty. Ganesan-Lim, Russell-Bennett, and Dagger (2008) stressed the significance of comprehending the relationship between the customer's perception related to various constructs and demographic information such as age, gender and income level, as this information may be useful for various purposes. Demographic information permits researchers to get characteristics of their sample, which helps in classifying the data in a more meaningful manner (Elanain, 2003). Some important studies conducted by researchers related to testing the influence of demographic characteristics on customer loyalty are presented underneath.

Saad, Ishak, and Johari (2013) examined the degree to which demographic characteristics are associated with loyalty in case of credit card service. The demographics variables considered in the study were age, gender, income level, occupation and lifestyle of customers. The result of hypothesis testing displayed that only income level is associated with customer loyalty and no association is found in case of other four demographic factors.

Seiler, Rudolf, and Krume (2013) studied the influence of customer demographics characteristics on service value, customer satisfaction, and loyalty in the private banking sector. The socio-demographic variables covered under the study were gender, age, employment status, relationship lengths, type of bank, number of banking relationships and size of liquid assets. The researchers found that a strong positive impact of customer satisfaction on loyalty. However, they did not find any direct significant influence of service value on customer loyalty. In case of customer demographics, they found significant differences in mean scores as to employment status, size of liquid assets and type of private banking service provider.

Saeed, Lodhi, and Afzal (2013) conducted a study on bank customers to determine the effect of demographic variables on customer loyalty. The researchers found that there is an impact of demographic variables age, academic

qualification, marital status, duration of relationship and customer category. However, no effect was found in case of gender.

Mburu (2014) conducted a study in Kenyan banking industry. His work examined the relation between demographic characteristics (age, gender, educational level, monthly income, marital status, occupation) and customer retention. Results indicated that demographic variables including age, monthly income, and level of education were found to be related with customer retention.

Tweneboah-Koduah and Farley (2016) studied the relationship between the dimensions of customer satisfaction and loyalty, as well as the influence of socio-economic characteristics on loyalty in the banking sector of Ghana. Four demographic variables including gender, age, education and income were considered in the study. Their work found a significant effect of respondent age on customer loyalty and no significant influence of gender, education and income on loyalty.

The influence of the customers' demographic characteristics on their outlook towards different banking technologies has been probed in many studies. Literature suggests that consumer demographics have an influence on customer loyalty in case of banking technologies. Considering the possibility of difference in socio-economic backgrounds of mobile banking customer and special focus on mobile banking services by commercial banks in India to enhance its acceptance level, there is a requirement to test the effect of mobile banking customers' demographic characteristics on loyalty in case of mobile banking services. So, data corresponding to demographic profile of the mobile banking customers is collected in this study and the effect of demographic characteristics (gender, age, highest completed qualification, occupation, annual income) on customer loyalty is examined using the following five hypotheses

H1₀: There is no significant difference in mb-loyalty between males and females.

H2₀: There is no significant difference in mb-loyalty across age groups.

H3₀: There is no significant difference in mb-loyalty across highest completed education.

H4₀: There is no significant difference in mb-loyalty across occupations.

H5₀: There is no significant difference in mb-loyalty across income groups.

The corresponding alternative hypotheses are

H1₁: There is a significant difference in mb-loyalty between males and females.

H2₁: There is a significant difference in mb-loyalty across age groups.

H3₁: There is a significant difference in mb-loyalty across highest completed education.

H4₁: There is a significant difference in mb-loyalty across occupations.

H5₁: There is a significant difference in mb-loyalty across income groups.

Research Methodology

To achieve the objectives of the research, a quantitative study is carried out in which primary data from a sample of 312 mobile banking customers of different banks in Delhi and NCR region is collected. The closed-ended questionnaire consisted of questions pertaining to demographic characteristics and customer loyalty with the mobile banking services. The demographic variables covered under the study are gender, age, highest completed education, occupation, and annual income. Respondents using mobile banking services and above 18 years of age are part of the survey. Five fixed alternative closed-ended questions are asked to collect sample respondents' demographic information. A 5-point Likert type scale is used to capture level of customer loyalty with the mobile banking services. Simple descriptive statistics is used to summarise the respondents' demographic characteristics. For data analysis, statistical techniques like Levene's test, t-test, analysis of variance, and post-hoc analysis are used. Levene's test is an inferential statistic used to test the equality of variances for a variable calculated for two or more groups (Levene, 1960). In other words, Levene's test of Homogeneity of variance is used to assess whether the samples have equal variances. t-test and analysis of variance are used to assess the significant difference.

Data Analysis and Results

Demographic Profile of the Respondents

Table 1 presents the demographic profile of the sample. Analysis result shows that 59.6 percent of the respondents

are male while 40.4 percent are female, indicating the significant participation of males and females in the survey. Age is classified into four groups and minimum participation of 12.5 percent is from respondents having age more than 45 years, which indicates the substantial participation of each age group respondents in the survey. The biggest group of respondents (39.4 percent) is having age more than 25 and up to 35 yrs. 88.9 percent of respondents are graduate and above, indicating respondents are well-qualified. As far as an occupation is concerned, the majority of respondents (48.7 percent) are salaried but a sizeable number of respondents from all the four categories of student, salaried, self-occupied, and others (housewives, retired persons, pensioners, non-employed etc.) are part of the sample. Similarly, respondents from all income groups participated in the survey. 56.7 percent respondents are having income more than Rs. 2 lacs and up to 5 lacs.

The analysis results pointed out that the sample of 312 represents the total population as the survey capture responses from considerable number of mobile banking customers from different profile.

Table 1: Demographic Profile of the Respondents

		Percent
Gender	Male	59.6
	Female	40.4
Age	More than 18 yrs - up to 25 yrs	19.6
	More than 25 yrs - up to 35 yrs	39.4
	More than 35 yrs - up to 45 yrs	28.5
	More than 45 yrs	12.5
Highest Completed Education	Graduate	56.2
	Post Graduate and above	32.7
	Others	11.1

		Percent
Occupation	Student	12.2
	Salaried	48.7
	Self-employed	24.4
	Others	14.7
Annual Income (in INR)	up to 2 Lacs	13.8
	More than 2 lacs- up to 5 Lacs	56.7
	More than 5 lacs- up to 10 Lacs	17.0
	More than 10 Lacs	12.5

Hypothesis Testing (Influence of Demographic Characteristics on mb-Loyalty)

The t-test and Analysis of Variance (ANOVA) are used to find whether there is any significant difference in mb-loyalty on the basis of demographic variables. To examine the effect of demographic characteristics, significance value of 0.05 is used in this research. In case a significant difference is found on applying ANOVA test, Post hoc analysis is carried out for detailed analysis. The t-test and ANOVA assume that the populations from which the samples are drawn have equal variances. Levene’s test is generally used to test the homogeneity of variance. If significance value corresponding to Levene’s statistic is higher than 0.05, then the samples are considered to be drawn from the populations having equal variance. The results of hypothesis testing are explained below.

H1₁: There is a significant difference in mb-loyalty between males and females.

In Table 2, significance value in case of Levene’s test is found to be 0.144, which is higher than 0.05. This depicts that the condition of homogeneity of variances is met. The results of t-test pointed out that there is no significant difference in mb-loyalty by the demographic variable gender at a significance value of 0.05 (computed significance value=0.607). Consequently, H1₁ is not supported.

Table 2: Effect of Gender on Mb-Loyalty

	Levene’s Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	2.143	0.144	-0.515	310	0.607
Equal variances not assumed			-0.527	287.276	0.599

One way ANOVA is used to analyse the significant differences in customer loyalty for variables age, education, occupation and income.

H2₁: There is a significant difference in mb-loyalty across age groups.

The result of Levene’s test in Table 3 indicates the significance value of 0.112. Significance value higher

than 0.05 corresponding to Levene’s test implies that the samples are drawn from the populations having equal variance. Further, ANOVA test result shows that there is a

significant difference (sig. = 0.038) in the measure of mb-loyalty by age at significance value of 0.05. As a result, H2₁ is supported.

Table 3: Effect of Age on Mb-Loyalty

Levene’s Test for Equality of Variances		ANOVA Test Results					
Levene Statistic	Sig.		Sum of Squares	Df	Mean Square	F	Sig.
4.660	0.112	Between Groups	3.322	3	1.107	2.850	0.038
		Within Groups	119.644	308	0.388		
		Total	122.966	311			

Post hoc analysis in Table 4 revealed that there is a significant difference between respondents in age group “18-25 years” and “more than 35 - up to 45 years” on

mb-loyalty. However, no significant difference is found between other age categories.

Table 4: Post hoc Analysis of Age on Mb-Loyalty

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18- up to 25 yrs	More than 25 -up to 35 yrs	.12815	.09760	.555	-.1240	.3803
	More than 35- up to 45 yrs	.29319*	.10360	.025	.0256	.5608
	More than 45 yrs	.10845	.12778	.831	-.2216	.4385
More than 25 -up to 35 yrs	18- up to 25 yrs	-.12815	.09760	.555	-.3803	.1240
	More than 35- up to 45 yrs	.16505	.08673	.229	-.0590	.3891
	More than 45 yrs	-.01970	.11454	.998	-.3156	.2762
More than 35- up to 45 yrs	18- up to 25 yrs	-.29319*	.10360	.025	-.5608	-.0256
	More than 25 -up to 35 yrs	-.16505	.08673	.229	-.3891	.0590
	More than 45 yrs	-.18475	.11969	.413	-.4939	.1244
More than 45 yrs	18- up to 25 yrs	-.10845	.12778	.831	-.4385	.2216
	More than 25 -up to 35 yrs	.01970	.11454	.998	-.2762	.3156
	More than 35- up to 45 yrs	.18475	.11969	.413	-.1244	.4939

*. The mean difference is significant at the 0.05 level.

H3₁: There is a significant difference in mb-loyalty across highest completed education levels.

having equal variances. ANOVA results illustrates that the mb-loyalty differ significantly on the basis of highest completed education (Sig. value 0.014 < 0.05). Therefore, H3₁ is supported.

In Table 5, significance value greater than 0.05 in Levene’s test depicts that the samples are drawn from populations

Table 5: Effect of Education on Mb-Loyalty

Levene’s Test for Equality of Variances		ANOVA Test Results					
Levene Statistic	Sig.		Sum of Squares	df	Mean Square	F	Sig.
2.261	0.106	Between Groups	3.378	2	1.689	4.364	0.014
		Within Groups	119.588	309	0.387		
		Total	122.966	311			

Post-hoc analysis in Table 6 revealed that respondents having highest education “Graduate” differ significantly

from the “Others” category as far as loyalty with the mobile banking services is concerned.

Table 6: Post hoc Analysis of Education on Mb-Loyalty

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Graduate	Post Graduate and Above	.07925	.08286	.605	-.1159	.2744
	Others	.26576*	.09166	.011	.0499	.4816
Post Graduate and Above	Graduate	-.07925	.08286	.605	-.2744	.1159
	Others	.18651	.08763	.086	-.0199	.3929
Others	Graduate	-.26576*	.09166	.011	-.4816	-.0499
	Post Graduate and Above	-.18651	.08763	.086	-.3929	.0199

* The mean difference is significant at the 0.05 level.

H4₁: There is a significant difference in mb-loyalty across Occupations.

In Table 7, significance value greater than 0.05 in Levene's test signifies that the assumption of homogeneity of

variances is met. As significance value in case of ANOVA test is found to be 0.928 (> 0.05), mb-loyalty do not differ significantly across occupations. Thus, H4₁ is not supported.

Table 7: Effect of Occupation on Mb-Loyalty

Levene's Test for Equality of Variances		ANOVA Test Results					
Levene Statistic	Sig.		Sum of Squares	df	Mean Square	F	Sig.
0.555	0.645	Between Groups	0.183	3	0.061	0.153	0.928
		Within Groups	122.783	308	0.399		
		Total	122.966	311			

H5₁: There is a significant difference in mb-loyalty across income groups.

The result of Levene's test in Table 8 reflects the significance value of 0.341. Significance value higher than 0.05 corresponding to Levene's test implies that

the samples are drawn from the populations having equal variance. ANOVA test result in Table 8 illustrated that there is a significant difference in mb-loyalty across respondents from different income groups at the significance value of 0.05. So, H5₁ is supported.

Table 8: Effect of Income on Mb-Loyalty

Levene's Test for Equality of Variances		ANOVA Test Results					
Levene Statistic	Sig.		Sum of Squares	df	Mean Square	F	Sig.
1.121	0.341	Between Groups	3.120	3	1.040	2.673	0.048
		Within Groups	119.846	308	0.389		
		Total	122.966	311			

Post-hoc analysis in Table 9 revealed that respondents having income "up to Rs. 2 lacs" differ significantly from the respondents in income group "more than Rs.

5 lacs- up to Rs. 10 lacs" as far as loyalty with mobile banking services is concerned. No significant difference is observed among other income groups.

Table 9: Post hoc Analysis of Income on Mb-Loyalty

(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Up to 2 Lacs	More than 2- up to 5 Lacs	.05845	.08554	.903	-.1625	.2794
	More than 5- up to 10 Lacs	.26558*	.09854	.037	.0110	.5201
	More than 10 Lacs	.14402	.14542	.755	-.2316	.5197
More than 2- up to 5 Lacs	upto 2 Lacs	-.05845	.08554	.903	-.2794	.1625
	More than 5- up to 10 Lacs	.20713	.09257	.115	-.0320	.4462
	More than 10 Lacs	.08558	.14144	.930	-.2798	.4509
More than 5- up to 10 Lacs	upto 2 Lacs	-.26558*	.09854	.037	-.5201	-.0110
	More than 2- up to 5 Lacs	-.20713	.09257	.115	-.4462	.0320
	More than 10 Lacs	-.12156	.14966	.849	-.5081	.2650
More than 10 Lacs	upto 2 Lacs	-.14402	.14542	.755	-.5197	.2316
	More than 2- up to 5 Lacs	-.08558	.14144	.930	-.4509	.2798
	More than 5- up to 10 Lacs	.12156	.14966	.849	-.2650	.5081

* The mean difference is significant at the 0.05 level.

Findings and Managerial Implications

The research empirically examined the effect of demographic characteristics on customer loyalty with mobile banking services. The results of t-test illustrated that mb-loyalty do not differ significantly on the basis of gender. ANOVA results confirmed that there is a significant difference in mb-loyalty across respondents from different age groups, education, and income levels. The findings that age, education, and income have a significant effect on loyalty are in line with other studies (Saeed *et al.*, 2013; Mburu, 2014). The result of post-hoc analysis revealed that respondents of age group “18-25 years” differ significantly from the respondents of age group “more than 35 years- up to 45 years” on mb-loyalty. “18-25 years” respondents are found to be more loyal than respondents in age group “more than 35 years- up to 45 years”. Similarly, significant difference is observed between “graduate” and “others” category respondents. “Graduate” respondents are found to have higher loyalty level in comparison to “others” category respondents. In addition to this, significant difference in mb-loyalty across income groups is also observed and respondents in income group “up to Rs. 2 lacs” are found to be more loyal to mobile banking services as compared to respondents in income group “more than Rs. 5 lacs - up to Rs. 10 lacs”.

Analysis shows that mobile banking customer demographics have an influence on customer loyalty. This

has implications for bankers that they should take into consideration the demographic characteristics of not only branch banking customers but also of mobile banking customers at the time of designing services. It is also import for bankers to take into account the differences as to the demographic variables. Therefore, bankers should think about specific value propositions for the different mobile banking customer segments.

The findings suggest that age, education, and income level of mobile banking customers are found to have a significant effect on customer loyalty. Therefore, it is vital for the banks to give special consideration towards the needs of the customers belonging to higher age brackets, lower education levels, and higher income groups. This implies that rather than having a common education and training platform for all customers, banks may arrange customised education and training programmes for mobile banking customers of different age, education background and income levels as per their requirements for enhancing loyalty levels.

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