A STUDY ON THE FACTORS AFFECTING ADOPTION OF INTERNET BANKING-A CASE STUDY OF AXIS BANK INDIVIDUAL CUSTOMERS OF JAMNAGAR DISTRICT BRANCHES

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Abstract— **The major objective of this study was to identify the factors affecting adoption of Internet Banking (IB) among Axis Bank's individual customers of Jamnagar District Branches. The specific objectives were: to find out the difference between adopters and non-adopters of Internet Banking with respect to demographic factors such as age, income, education, marital status, occupation status, and gender; and with respect to their perceptions towards internet banking such as relative advantage, complexity, perceived risk, and perceived cost of internet banking; and to determine the factors influencing the probability of adopting internet banking. Using a cross-sectional survey approach, primary data was collected from a random sample of 274 individual customers of Axis bank of Jamnagar District branches using self-administered questionnaires. The data was analyzed using frequencies, percentages, chi-square tests, independent t-tests, and logistic regression analysis techniques. Based on the results of the chi-square test, the conclusion is that there was a significant difference between adopters and non-adopters of IB with respect to four demographic factors including age, income, education, and occupation; while there is no significant difference between adopters and non-adopters of IB with respect to the demographic factors of marital status and gender. Furthermore, based on the results of the independent t-test, the conclusion is that there was a significant difference between adopters and non-adopters of IB with respect to their perceptions towards IB such relative advantage, complexity, perceived risk, and perceived cost.**

Index Terms— **perceptions, Cross-sectional, education, non-adopters, complexity**

I. INTRODUCTION

1.1 Background of the Study

Internet banking (IB) is the act of conducting financial intermediation on the Internet (VanHoose, 2003). It represents an electronic market place where customers can conduct their financial transactions virtually (Srivastava, 2007). It is different from Electronic banking (e-banking) with the latter being a higher level activity encompassing not only IB, but also Telephone banking, Automated Teller Machines (ATM), Wireless Application Protocol (WAP)-banking, and other electronic payment systems not operated through the Internet. In developed countries, the popularity of IB as delivery channel for banking services has grown, replacing the branch-based model of banking and the manual service functions provided by employees (Cheng, Lam and Yeung, 2006). IB enables the users to perform various activities including: writing checks, paying bills, transferring funds, printing statements, and inquiring about account balances, from any location, provided there is Internet access (Hoppe, Newman and Mugera, 2001; Frust, Lang and Nolle, 2000). In most developing countries, IB is in its infancy stage. However, banks are beginning to take advantage of the benefits it offers; hence, its availability is growing day-by-day. Over the years, other commercial banks have developed the service and are promoting its use among their customers. Axis Bank is one among the many banks promoting IB for use among its customers in India. The customers can use this service to access latest balance, financial statements, view account details, customize, print, download statements, and obtain a recent history statement on all their accounts). In spite of the bank's efforts, the level of adoption of IB among its customers is very low.

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1.2 Statement of the Problem

Although Axis Bank is promoting IB for use among its customers of Jamnagar District branches, the adoption of the service remains low, suggesting the service is largely unnoticed and underutilized in spite of its availability. Hence, there is need to identify the factors affecting adoption of Internet Banking among Axis Bank individual customers of Jamnagar District branches.

1.3 Objective of the Study

The major objective of this study was to examine the factors affecting adoption of Internet Banking among Axis Bank individual customers of Jamnagar District branches. The specific objectives of the study were:

1. To find out the difference between adopters and non-adopters of IB with respect to their demographic factors such as gender, age, education, occupation, marital status and income; and with respect to their perceptions towards IB such as relative advantage, complexity, perceived risk, and perceived cost of IB, and
2. To determine the factors influencing the probability of adopting IB.

1.4 Research Hypotheses

The study was based on the following hypotheses:

1. There is a significant difference between adopters and non-adopters of IB with respect to demographic factors such as gender, age, education, occupation and income; and with respect to their perceptions

and/or attitudes towards IB, such as, relative advantage, complexity, perceived risk, and perceived cost of IB,

2. There is a positive relationship between education, income, relative advantage and the probability of adopting IB, and
3. There is a negative relationship between age, complexity, perceived risk, perceived cost and the probability of adopting IB.

1.5 Significance of the Study

This study is significant in two ways. First, although IB is available in India, customer adoption of the service is still low, and yet to date, there is lack of sufficient research on factors affecting adoption of IB in the country. Investigating these factors may enable banks to increase their market share by creating solutions and strategies that attract consumers to use this type of banking. Therefore there is a need for a study of this kind. Second, the study shall contribute to the extremely scanty literature on IB in India, especially since most of the empirical studies on the subject highlight studies largely conducted in developed countries, while few studies have been conducted on this issue in developing countries like India.

1.6 Scope of the Study

Geographically, the study was confined to Axis Bank individual customers of Jamnagar District Branches. Jamnagar District was chosen because the potential users are customers of these branches. Theoretically, although there are various categories of factors mentioned in literature affecting adoption of IB, this study was confined to the widely documented demographic factors and customer perceptions towards IB.

1.7 Research Design

A research design specifies the purpose of the study, the approach of the study and the strategy used for the study (Saunders, Lewis & Thornhill, 2000). Given that there is hardly any empirical study on adoption of Internet banking in India, this study sought to explore and identify the factors affecting adoption of IB in Jamnagar District using Axis Bank individual customers of Jamnagar District branches. This study adopted a cross-sectional survey design involving the use of questionnaires to collect data on a wide range of variables at a given point in time. A sample of Axis Bank individual customers of Jamnagar District Branches were selected to participate in the study and asked to provide relevant information concerning issues related to adoption of IB as specified in the questionnaire. This study also adopted a quantitative approach to analyze the relevant data. The quantitative research approach involved numerical representation and manipulation of the data for the purpose of describing and explaining the phenomenon of adoption of IB by Axis Bank individual customers of Jamnagar District Branches.

1.8 Target Population

The target population of this study comprised all Axis Bank individual customers of Jamnagar District branches including: Joggers Park Branch, S.T Road Branch, Udyognagar Branch, Dared Branch, Jamkhambhalia Branch, Kalawad Branch, and Industrial Area Branch.

1.9 Sample Size and Sampling Procedure

A sample of 378 customers was chosen for the study. This sample size was determined using Krejcie and Morgan (1970) table showing appropriate sample size for a given population. The sample was selected using stratified random sampling method. Stratified random sampling involves a process of stratification, followed by random selection of subjects from each stratum. In this study, Axis Bank individual customers of Jamnagar District branches were stratified into seven strata according to the seven Jamnagar District branches.

1.10Data Collection Methods and Procedures

Primary data was collected using a self-administered questionnaire which comprised of both close-ended and open-ended questions. The questionnaire consisted of three parts. Part I sought customer responses on Internet banking-related issues. Part II sought information perceptions and attitudes of respondents toward using Internet Banking services. All responses to items on perceptions/attitudes towards IB were measured on a Likert scale ranging from 1=strongly disagree to 5=strongly agree. Part III obtained demographic information such as age, marital status, education, income and occupation.

1.11 Analysis:

4.1 Response Rate

A total of three hundred and seventy eight (378) questionnaires were distributed during the survey. However, 289 questionnaires were returned, of which 274 questionnaires were considered valid because they were fully filled. This represented a response rate of 72.4%. Of the 274 respondents, 20 percent were categorized as adopters of IB, while 80 percent were categorized as non-adopters of IB as indicated in table 4.1.

Table 4.1: Response rate about adoption of IB among respondents

	Frequency	Percent
Adopters of IB	55	20
Non-adopters of IB	219	80
Total	274	100

4.2 Differences between Adopters and Non-adopters of IB with Respect to their Demographic Factors and Perceptions towards IB

One of the specific objectives of this study was to find out the difference between adopters and non-adopters of IB with respect to their demographic factors such as age, education, occupation and income; and with respect to their perceptions and/or attitudes towards IB such as relative advantage, complexity, perceived risk, and perceived cost of IB. The findings in this regard are presented in two subsections; differences between adopters and non-adopters of IB with respect to their demographic factors; and the other with respect to their perceptions towards IB.

4.2.1 Differences between adopters and non-adopters of IB with respect to their demographic factors

A Chi-square test was used to test whether there were significant differences between adopters and non-adopters with respect to their demographic factors such as gender, age, education, income, and occupation. The results regarding this objective are presented in the following sub-sections.

4.2.1.1 Gender

The null hypothesis was that there is no difference between adopters and non-adopters of IB with respect to gender, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to gender. Table 4.2 presents a summary of the findings regarding this variable. The table shows that the biggest percentage of the adopters (56 percent) and non-adopters (51 percent) were male. The chi-square test value of 40.265 had a probability of 0.146 which is greater than 0.05. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to gender was not rejected, and it was concluded that there is no significant difference between adopters and non-adopters of IB with respect to gender.

Gender	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Male	143	52	31	56	112	51
Female	131	48	24	44	107	49
Total	274	100	55	100	219	100

Table 4.2: Differences between adopters and non-adopters of IB with respect to gender
Chi-square = 40.265; pr = 0.146

4.2.1.2 Age

The null hypothesis was that there is no significant difference between adopters and non-adopters of IB with respect to age, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to age. Table 4.3 presents a summary of the findings regarding this variable.

Table 4.3: Differences between adopters and non-adopters of IB with respect to age

Age (years)	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
21 – 29	73	27	35	64	38	17
30 – 39	128	46	11	20	117	54
40 – 49	43	16	8	15	35	16
50 and above	30	11	1	1	29	13
Total	274	100	55	100	219	100

Chi-square = 74.908; pr = 0.000

Table 4.3 shows that a bigger percentage of the adopters (64 percent) were in the 21 - 29 age bracket while the biggest percentage of non-adopters (54 percent) were in the 30 – 39 age bracket. The chi-square test value of 74.908 had a probability of 0.000 which is less than 0.05. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to age was rejected, and it was concluded that there is a significant difference between adopters and non-adopters of IB with respect to age. Generally, most adopters of IB among the sample of Axis Bank individual customers of Jamnagar District branches were younger compared to non-adopters. Therefore, this finding is line with Morris and Vankatesh (2000), Vankatesh et al. (2003) and Lee and Chaudrie (2002), who found that IB adopters tended to be generally younger, that is, they were generally below 35 years.

4.2.1.3 Education

The null hypothesis was that there is no significant difference between adopters and non-adopters of IB with respect to education, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to education. Table 4.4 presents a summary of the findings regarding this variable. The table shows that a bigger percentage of the adopters (75 percent) compared to non-adopters (39 percent) had attained university/tertiary level education. The chi-square test value of 45.881 had a probability of 0.041 which is less than 0.05. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to education was rejected, and it was concluded that there is a significant difference between adopters and non-adopters of IB with respect to education.

Table 4.4: Differences between adopters and non-adopters of IB with respect to education

Education	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Per cent	Frequency	Percent
University /tertiary	127	46	41	75	86	39
Secondary	81	30	11	20	70	32
Primary	54	20	1	2	53	25
Other	12	4	2	3	10	5
Total	274	100	55	100	219	100

Chi-square = 45.881; pr = 0.041

Generally, most adopters of IB among the sample of Axis individual customers of Jamnagar District branches were more educated compared to non-adopters. This finding is in line with the earlier studies by Morris and Vankatesh (2000), Anderson et al. (2002), and Choudrie and Papazafeiropolou

(2006), who found that adopters of IB were relatively more educated.

4.2.1.4 Occupation status

The null hypothesis was that there is no significant difference between adopters and non-adopters of IB with respect to occupation status, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to occupation status. Table 4.5 presents a summary of the findings regarding this variable.

Table 4.5: Differences between adopters and non-adopters of IB with respect to occupation status

Occupation	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Employed	161	59	48	87	113	51
Unemployed	82	30	4	7	78	36
Pensioner	31	11	3	6	28	13
Total	274	100	55	100	219	100

Chi-square = 65.866; pr = 0.062

The table shows that a bigger percentage of the adopters (87 percent) and non-adopters (51 percent) were employed. The chi-square test value of 65.866 had a probability of 0.062 which is significant at the 10% level of significance. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to occupation status was rejected, and it was concluded that there is a significant difference between adopters and non-adopters of IB with respect to occupation status. This finding is consistent with earlier findings by Choudrie and Dwivedi (2005) who found that in addition to age, occupation was also a significant driver the general pattern of IB ownership and usage.

4.2.1.5 Income

The null hypothesis was that there is no significant difference between adopters and non-adopters of IB with respect to income, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to income. Table 4.6 presents a summary of the findings regarding this variable. The table shows that 44 percent of the adopters were in the income bracket 1 – 1.5 (ten thousand rupees) while 36 percent of the non-adopters were in the income bracket 0.5 – 1 (ten thousand rupees) .

Table 4.6: Differences between adopters and non-adopters of IB with respect to mean monthly income

Monthly income range (ten thousand rupees)	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
> 1.5 M	45	16	11	20	34	16
1 – 1.5 M	57	21	24	44	33	15
0.5 – 1 M	93	34	15	27	78	36
< 0.5 M	79	29	5	9	74	33
Total	274	100	55	100	219	100

Chi-square = 36.921; pr = 0.047

The chi-square test value of 36.921 had a probability of 0.047 which is less than 0.05. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to income was rejected, and it was concluded that there is a significant difference between adopters and non-adopters of IB with respect to income. In general, most adopters of IB among the sample of Axis Bank individual customers of Jamnagar District branches had higher incomes compared to non-adopters. This finding was consistent with earlier studies by Choudrie and Dwivedi (2005) and Carveth and Kretchmer (2002), who found that adopters of IB were generally the high income group.

4.2.1.6 Marital status

The null hypothesis was that there is no significant difference between adopters and non-adopters of IB with respect to marital status, against the alternative that there is a significant difference between adopters and non-adopters of IB with respect to marital status.

Table 4.7: Differences between adopters and non-adopters of IB with respect to marital status

Marital status	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Married	145	53	37	67	108	50
Single	106	39	12	23	94	43
Divorced	19	7	3	5	16	7
Widowed	4	1	3	5	1	0.4

Total	274	100	55	100	219	100

Chi-square = 57.074; pr = 0.144

Table 4.7 shows that a bigger percentage of the adopters (67 percent) and non-adopters (50 percent) were married. The chi-square test value of 57.074 had a probability of 0.144 which is greater than 0.05. This means that the null hypothesis that there is no significant difference between adopters and non-adopters of IB with respect to marital status was not rejected, and it was concluded that there is no significant difference between adopters and non-adopters of IB with respect to marital status.

4.2.2 Differences between adopters and non-adopters of IB with respect to their perceptions towards IB

An independent t-test was used to test whether there were significant differences between the mean responses of adopters and non-adopters with respect to their perceptions towards IB such as relative advantage, complexity, perceived risk and perceived cost. Customer responses were rated on a likert scale with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. A mean response score below 3 was used to imply customers' disagreement with the particular statements about perceptions towards IB, while a mean response score above 3 was used to indicate customers' agreement with the statements. The results are presented in the following sub-sections.

4.2.2.1 Relative advantage

Respondents were asked to indicate their level of agreement with respect to two statements measuring relative advantage: "IB saves time" and "IB eases communication with the bank". In terms of IB saving time, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB saves time, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB saves time. Table 4.8 presents a summary of the findings regarding this statement. The table shows that the biggest percentage of adopters (95 percent) and non-adopters (51 percent) agreed that IB saves time. The mean response score of adopters was 3.94 while that of non-adopters was 2.52. Since the mean response score for adopters was greater than 3 and that of non-adopters was less than 3, it implies that, on average, adopters agreed that IB saves time while non-adopters disagreed that IB saves time.

Table 4.8: Differences between adopters and non-adopters of IB with respect to perception that IB saves time

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	2	1	0	0	2	1
Disagree	74	27	3	6	71	32
Neither	35	13	0	0	35	16
Agree	94	34	25	45	69	32
Strongly agree	69	25	27	49	42	19
Total	274	100	55	100	219	100

Independent t-test = 8.302; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The independent t-test value of 8.302 had a probability of 0.000 which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB saves time was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB saves time. This finding is in line with earlier studies by Fox (2002) and Karjaluoto et al. (2002), who found a positive association between adoption of IB and its beneficial features such as the ability to save time. In terms of IB easing communication with the bank, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB eases communication with the bank, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB eases communication with the bank. Table 4.9 presents a summary of the findings regarding this statement.

Table 4.9: Differences between adopters and non-adopters of IB with respect to perception that IB eases communication with the bank

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	5	2	1	2	4	2
Disagree	84	31	3	5	81	37
Neither	69	25	0	0	69	31
Agree	77	28	25	46	52	24
Strongly agree	39	14	26	47	13	6
Total	274	100	55	100	219	100

Independent t-test = 9.827; pr = 0.001; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

Table 4.9 shows that the biggest percentage of adopters (94 percent) agreed that IB eases communication with the bank, while 39 percent of non-adopters disagreed and 30 percent agreed with the statement. The mean response score for adopters was 3.58 while that of non-adopters was 2.30. Since the mean response score for adopters was greater than 3 and that of non-adopters was less than 3, it implies that, on average, adopters agreed that IB eases communication with the bank while non-adopters disagreed that IB eases communication with the bank. The independent t-test value of 9.827 had a probability of 0.001, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB eases communication with the bank was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB eases communication with the bank. This finding is consistent with earlier study by Leaderer et al. (2000), who found that adoption of IB was higher among individuals who believed that it improves communication with the bank.

4.2.2.2 Complexity

Respondents were asked to indicate their level of agreement with two statements measuring perceived complexity of IB: "using IB is complex" and "using the IB process is simple". In terms of the complexity of using IB, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that using IB is complex, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that using IB is complex. Table 4.10 presents a summary of the findings regarding this statement. The table shows that the biggest percentage of adopters (75 percent) disagreed that using IB is complex; while 44 percent of non-adopters agreed and 14 percent disagreed with the statement.

Table 4.10: Differences between adopters and non-adopters of IB with respect to perception that using IB is complex

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	39	14	33	60	6	3
Disagree	33	12	8	15	25	11
Neither	100	36	9	16	91	42
Agree	92	34	3	5	90	41
Strongly agree	10	4	2	4	7	3
Total	274	100	55	100	219	100

Independent t-test = 14.454; pr = 0.000: scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The mean response score of adopters was 2.68 while that of non-adopters was 3.58. Since the mean response score for adopters was less than 3 and that of non-adopters was greater than 3, it implies that, on average, adopters disagreed that using IB is complex while non-adopters agreed that using IB is complex. The independent t-test value of 14.454 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that using IB is complex was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that using IB is complex. This finding also collaborates with earlier study findings by Davis (1989), who found that complexity of an innovation determines its adoption by potential users. In terms of the simplicity of using the IB process, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that using the IB process is simple, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that using the IB process is simple. Table 4.11 presents a summary of the findings regarding this statement. The table shows that the biggest percentage of adopters (84 percent) agreed that using the IB process is simple while 47 percent of the non-adopter disagreed and only 5 percent of them agreed with the statement. The mean response score of adopters was 3.66 while that of non-adopters was 2.77. Since the mean response score for adopters was greater than 3 and that of non-adopters was less than 3, it implies that, on average, adopters agreed that using the IB process is simple while non-adopters disagreed that using the IB process is simple.

Table 4.11: Differences between adopters and non-adopters of IB with respect to perception that using IB process is simple

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	17	6	0	0	17	7
Disagree	89	33	1	2	88	40
Neither	113	41	8	15	104	48
Agree	32	12	25	45	8	4
Strongly agree	23	8	21	38	2	1
Total	274	100	55	100	219	100

Independent t-test = 16.356; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The independent t-test value of 16.356 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that using the IB process is simple was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that using the IB process is simple. The finding is also consistent with an earlier finding by Korem (2001), who found that the adoption of IB is likely to be increased when customers consider using the IB process to be easy.

4.2.2.3 Perceived risk

Respondents were asked to indicate their level of agreement with two statements measuring perceived risk of IB: "IB is safe and secure" and "I'm not afraid of disclosing my account details on the Internet". In terms of the safety and security of IB, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB is safe and secure, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB is safe and secure. Table 4.12 presents a summary of the findings regarding this statement.

Table 4.12: Differences between adopters and non-adopters of IB with respect to perception that IB is safe and secure

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	18	7	0	0	18	8
Disagree	80	29	2	4	79	36
Neither	88	32	4	7	84	38
Agree	67	24	31	56	36	16
Strongly agree	21	8	18	33	3	2
Total	274	100	55	100	219	100

Independent t-test = 14.975; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The table shows that the biggest percentage of adopters (89 percent) agreed that IB is safe and secure while 44 percent of non-adopters disagreed and only 18 percent of them agreed with the statement. The mean response score for adopters was 3.48 while that of non-adopters was 2.45. Since the mean response score for adopters was greater than 3 and that of non-adopters was less than 3, it implies that, on average, adopters agreed that IB is safe and secure while non-adopters disagreed that IB is safe and secure. The independent t-test value of 14.975 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB is safe and secure was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB is safe and secure. The finding is consistent with earlier findings by Hartman et al. (2000), who found that perceived security of IB services determines the likelihood of using such services. In terms of customers not being afraid of disclosing their account details on the Internet, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that they are not afraid of disclosing their account details on the Internet, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that they are not afraid of disclosing their account details on the Internet. Table 4.13 presents a summary of the findings regarding this statement.

Table 4.13: Differences between adopters and non-adopters of IB with respect to perception that they are not afraid of disclosing their account details on the Internet

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	48	18	2	4	46	21
Disagree	103	38	4	7	99	45
Neither	34	12	1	2	33	15
Agree	43	15	25	45	18	8
Strongly agree	46	17	23	42	23	11
Total	274	100	55	100	219	100

Independent t-test = 4.216; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The table shows that the biggest percentage of adopters (87 percent) agreed that they are not afraid of disclosing their account details on the Internet while the biggest percentage of non-adopters (66 percent) disagreed with the statement. The mean score response of adopters was 3.68 while that of non-adopters was 2.89. Since the mean response score for adopters was greater than 3 and that of non-adopters was less than 3, it implies that, on average, adopters agreed that they are not afraid of disclosing their account details on the Internet IB while non-adopters disagreed that they are not afraid of disclosing their account details on the Internet. The independent t-test value of 4.216 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean

responses of adopters and non-adopters of IB with respect to the perception that they are not afraid of disclosing their account details on the Internet was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that they are no afraid of disclosing their account details on the Internet. The finding is also consistent with earlier findings by Lain (2000) and Bestavros (2000), who found that potential customers of IB are often reluctant to share personal information for fear that their financial life will become an open book to the Internet universe.

4.2.2.4 Perceived cost

Respondents were asked to indicate their level of agreement with two statements measuring perceived cost of IB: "IB is expensive" and "Internet installation is expensive". In terms of IB being expensive, the null hypothesis was that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB is expensive, against the alternative that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to perception that IB is expensive. Table 4.14 presents a summary of the findings regarding this statement.

Table 4.14: Differences between adopters and non-adopters of IB with respect toperception that IB is expensive

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	5	2	2	4	3	1
Disagree	35	12	32	58	3	1
Neither	20	8	1	2	19	9
Agree	145	53	16	29	129	59
Strongly agree	69	25	4	7	65	30
Total	274	100	55	100	219	100

Independent t-test = 15.462; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The table shows that the biggest percentage of adopters (62 percent) disagreed with the statement that IB is expensive while the biggest percentage of non-adopters (89 percent) agreed with the statement. The mean response score of adopters was 2.89 while that of non-adopters was 3.92. Since the mean response score for adopters was less than 3 and that of non-adopters was greater than 3, it implies that, on average, adopters disagreed that IB is expensive while non-adopters agreed that IB is expensive. The independent t-test value of 15.462 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB is expensive was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that IB is expensive. This finding is in line with earlier finding by Bradley and Stewart (2003), who found that high subsequent costs incurred during use of IB were considered one of the inhibitors of the diffusion of Internet Banking.

Table 4.15: Differences between adopters and non-adopters of IB with respect to perception that Internet installation is very expensive

Option	Respondents		IB Adopters		IB Non-adopters	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly disagree	6	2	5	9	1	1
Disagree	35	13	30	54	5	2
Neither	42	15	2	4	40	18
Agree	137	50	7	12	125	57
Strongly agree	54	20	11	21	48	22
Total	274	100	55	100	219	100

Independent t-test = 11.765; pr = 0.000; scales: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

Table 4.15 shows that the biggest percentage of adopters (63 percent) disagreed with the statement that Internet installation is very expensive while the biggest percentage of non-adopters (79 percent) agreed with the statement. The mean score of adopters was 2.76 while that of non-adopters was 3.87. Since the mean response score for adopters was less than 3 and that of non-adopters was greater than 3, it implies that, on average, adopters disagreed that Internet installation is expensive while non-adopters agreed that Internet installation is expensive. The independent t-test value of 11.765 had a probability of 0.000, which is less than 0.05. This means that the null hypothesis that there is no significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that Internet installation is very expensive was rejected, and it was concluded that there is a significant difference between the mean responses of adopters and non-adopters of IB with respect to the perception that Internet installation is very expensive. This is in line with the findings Bradley and Stewart (2003), who found that high initial set up costs of Internet were considered the greatest inhibitors of the diffusion of Internet Banking.

4.3 Factors Influencing the Probability of Adopting Internet Banking

The second specific objective of this study was to determine the factors influencing the probability of adopting IB among Axis Bank individual customers of Jamnagar District Branches. A logistic regression model was estimated and the results are summarized in table 4.16. Only variables that were found significant at the 5 percent level of significance in the earlier analysis involving chi-square test and independent t-test were included in the regression model, and these include: age, income, education, relative advantage, complexity, perceived risk and perceived cost.

Table 4.16: A logistic regression of factors affecting adoption of IB

Variable	Beta	Std. Error	Wald	df	Sig	Exp (β)	Marginal Effect
Age	-0.209	0.083	6.355	1	0.012**	0.811	-0.096
Income	0.309	0.156	3.917	1	0.008***	1.362	0.049
Education	0.170	0.164	1.075	1	0.014**	1.185	0.388
Relative advantage	0.169	0.137	1.523	1	0.097*	1.184	0.336
Complexity	-0.035	0.120	0.084	1	0.037**	0.966	-0.001
Perceived risk	-0.229	0.103	4.952	1	0.026**	0.795	-0.097
Perceived cost	-0.095	0.152	0.393	1	0.032**	0.909	-0.072
Constant	3.216	2.782	1.337	1	0.248	24.928	
Pearson's chi-square = 21.58** Overall cases correctly predicted = 62.04% Correctly predicted adopters = 56% Correctly predicted non-adopters = 67% N = 274							

*significant at 10% level, **significant at 5%, ***significant at 1%

Table 4.16 shows that the estimated coefficient of age was negative and significant at the 5 percent level of significance, implying that the probability of adopting IB decreases with increase in age. The marginal effect result shows that, holding the other factors constant, the probability of adopting Internet banking increases by 9.6 percent when the bank customer is of a lower age (below 40 years). The estimated coefficient of income was positive and significant at 1 percent level of significance, implying that the probability of adopting IB increases with increase in income. The estimated coefficient of education was positive and significant at the 5 percent level of significance, implying that the probability of adopting IB increases with increase in education. The marginal effect result shows that, holding the other factors constant, the probability of adopting Internet banking increases by 38.8 percent when the bank customer has university/tertiary education. The estimated coefficient of relative advantage was positive and significant at the 10 percent level of significance, implying that the probability of adopting IB increases with increase in perceived relative advantage of IB. The marginal effect result shows that, holding the other factors constant, the probability of adopting Internet banking increases by 33.6 percent when the bank customer perceives Internet banking to be advantageous.

RECOMMENDATIONS

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to age, with adopters generally being the young population. This factor also significantly influenced the probability of adopting IB. Therefore, the bank should put more emphasis on promoting IB among the young population by raising awareness about benefits of IB to them. However, this should not be done at the expense of other customers in relatively older age brackets because they too can adopt IB, especially if they are made aware of its existence and potential benefits.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to income, with adopters generally being the relatively high income group. This factor also significantly influenced the probability of adopting IB. Therefore, the bank should invest more time, effort and money on promoting IB services among the relatively high income group who are more likely to use them. This is based on the fact that the whole process of using Internet banking requires sacrificing some amount of resources, which may not be affordable to low income people who are highly constrained.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to education, with adopters generally being relatively of higher education. This factor also significantly influenced the probability of adopting IB. The bank should therefore focus promoting IB on the relatively more educated customers. This is because the use of IB requires skills for using complementary IB gadgets such as computers and IB software.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to the perceived relative advantage of IB. Adopters of IB generally had the perceptions that IB saves time and that it improves communication with their bank, while non-adopters generally did not believe that IB saves time and it improves communication with their bank. Therefore the bank should increase awareness about IB through sensitizing its customers, particularly the non-adopters, about the various benefits of IB so as to encourage its adoption.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to the perceived complexity of IB. Adopters of IB generally had the perceptions that IB is not expensive and that using the IB process is simple, while non-adopters generally had the perceptions that IB is expensive and that using the IB process is not simple. This factor also significantly influenced the

probability of adopting IB. The bank should therefore aim to make its IB services as simple and easy to use as possible so that customers do not perceive them as being complicated or difficult to use. Websites should be user-friendly with clear instructions for users. To further alleviate perceptions of complexity associated with IB services, demonstrations via video presentations could be made at the bank's branches to showcase the user-friendliness of such services.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to the perceived risk of IB. Adopters of IB generally had the perceptions that IB is safe and secure and that they were not afraid of disclosing their account details over the Internet, while non-adopters generally had the perceptions that IB is not safe and secure and that they were afraid of disclosing their account details on the Internet. This factor also significantly influenced the probability of adopting IB. The bank should therefore install security features such as encryption devices, which safeguard sensitive customer information. The bank also needs to look into equipping their systems with more powerful and advanced computer technologies.

The study showed that there was a significant difference between adopters and non-adopters of IB with respect to the perceived cost of IB. Adopters of IB generally had the perceptions that IB is not expensive and that Internet installation is not expensive, while non-adopters generally had the perceptions that IB is expensive and that installing it is expensive. This factor also significantly influenced the probability of adopting IB. Therefore, the bank should endeavor to minimize the costs associated with IB. It should not charge fees for similar banking services that are free-of-charge in the physical world (for example, at bank branches and/or ATMs). However, certain transactions, such as cheque cancellations and wire transfers, would still require administrative charges. Also, the bank could consider introducing price bands where customers who process large volumes of transactions online, receive a discount on transaction charges.

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