



**“A STUDY ON THE FACTORS INFLUENCING THE ADOPTION OF
INTERNET BANKING WITH REFERENCE TO SELECT COMMERCIAL
BANKS IN SAURASHTRA REGION”**

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ABSTRACT

Customers have started perceiving the services of bank through internet as a prime attractive feature than any other prime product features of the bank. Customers have started evaluating the banks based on the convenience and comforts it provides to them. Bankers have started developing various product features and services using internet applications.

Private Banks in India were the first to implement internet banking services in the banking industry. Private Banks, due to late entry into the industry, understood that the establishing network in remote corners of the country is a very difficult task. It was clear to them that the only way to stay connected to the customers at any place and at anytime is through internet applications. They took the internet applications as a weapon of competitive advantage to corner the great monoliths like State Bank of India, Indian Bank etc. Private Banks are pioneer in India to explore the versatility of internet applications in delivering services to customers.

Thus this study will try to examine the customer's perceptions towards internet banking considering select commercial banks in the saurashtra region.

1.1 Introduction

Internet banking is the term used for new age banking system. Internet banking is also called as online banking and it is an outgrowth of PC banking. Internet banking uses the internet as the delivery channel by which to conduct banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages and purchasing financial instruments and certificates of deposits (Haque et al, 2009). Internet banking is a result of explored possibility to use internet application in one of the various domains of commerce. It is difficult to infer whether the internet tool has been applied for convenience of bankers or for the customers' convenience. But ultimately it contributes in increasing the efficiency of the banking operation as well providing more convenience to customers. Without even interacting with the bankers, customers transact from one corner of the country to another corner.

There are many advantages of online Banking. It is convenient, it isn't bound by operational timings, there are no geographical barriers and the services can be offered at a minuscule cost (IAMAI's, 2006). Electronic banking has experienced explosive growth and has transformed traditional practices in banking (Gonzalez et al., 2008).

1.2 Literature Review

According to Tan and Teo (2000) if customers are given the chance to try the innovation, it will minimize certain fears, especially when customers found that mistakes could be rectified and thus providing a predictable situation.

Reddy and Yuvaraja (2001) were of the view that the adoption of international capital adequacy standards, deregulation of interest rates and entry of private and foreign banks underlined that the speed and sequencing of the financial sector reforms should be as per the requirements of the Indian economy.

Rao (2002) concluded that the international regulations are forcing the Indian banks to adopt better operational strategies and upgrade the skills. The system requires new technologies, well-guarded risk and credit appraisal system, treasury management, product diversification, internal control, external regulation as well as skilled human resources to achieve the international excellence and to face the global challenges.

Muniappan (2003) focused on two areas - firstly, challenges faced by the Indian banks and secondly, the management of these challenges. Every aspect of the banking industry, be it profitability, NPA management, customer service, risk management, HRD etc., has to

undergo the process of transformation of aligning with the international best practices. He concluded that the future of Indian banking system needs a long-term strategy, which should cover areas like structural aspects, business strategies, prudential control systems, integration of markets, technology issues, credit delivery mechanism and information sharing, etc.

Ghosh and Das (2005) highlighted the ways how market forces may motivate banks to select high capital adequacy ratios as a means of lowering their borrowing costs. If the effect of competition among banks is strong, then it may overcome the tendency for bank capitalization. If systemic effects are strong, regulation is required. Empirical tests for the Indian public sector banks during the 1990s demonstrated that better capitalised banks experienced lower borrowing costs.

Mohan (2006) focused on the changes in efficiency and productivity in Indian banking and stated that the patterns of efficiency and technological change witnessed in Indian banking can be viewed as consistent with expectations in an industry undergoing rapid change in response to the forces of deregulation. In reaction to evolving market prospects, a few pioneering banks might adjust quickly to seize the emerging opportunities, while others respond slowly and cautiously.

Sharma and Nikadio (2007) presented an analytical review of the capital adequacy regime of the banking sector in India and concluded that in the regime of Basel I, Indian banking system performed reasonably well, with an average CRAR of about 12 per cent, which was higher than the internationally accepted level of 8 per cent as well as India's own minimum regulatory requirement of 9 per cent.

Fred, Stephen and Arthur (2009) used a multivariate discriminant model to differentiate between low efficiency and high efficiency community banks (less than \$1 billion in total assets) based upon the efficiency ratio, a commonly used financial performance measure that relates non-interest expenses to total operating income. The discriminate model was applied using data for 2006-2008 and also included the periods of high performance as well as the deteriorating industry conditions associated with the current financial crisis. The model's classification accuracy ranges approximately from 88-96 per cent for both original and cross-validation data sets.

Dwivedi and Charyulu (2011) analyzed the impact of various market and regulatory initiatives on efficiency improvements of Indian banks with the help of Data Envelopment Analysis (DEA) and found that national banks, new private banks and foreign banks have showed high efficiency over a period of time than the remaining banks.

Uppal (2011) analyzed the performance of major banks in terms of productivity and profitability in the pre and post e-banking period and concluded that performance of all the banks under study is much better in posted- banking period and further foreign banks are at the top position, whereas the performance of the public sector banks is comparatively very poor.

Ghosh and Ghosh (2011) emphasized on management of non-performing assets in the perspective of the public sector banks in India under strict asset classification norms, use of latest technological platform, recovery procedures and other bank specific indicators in the context of stringent regulatory framework of the Reserve Bank of India and concluded that the reduction of non-performing asset is necessary for improving the profitability of banks and to comply with the capital adequacy norms as per the Basel Accord(s).

1.3 Research Title:

“A Study of the factors that influence the adoption of internet banking-An Exploratory study based on selected commercial banks of Saurashtra”

1.4. Sub Objectives:

However, based on the main objectives of the study, the following sub objectives were evolved for the study:

- The present study has attempted to explore the major factors responsible for internet banking based on respondents' perception on various internet applications.
- The study has tried to examine whether there is any relation with the demographic variable (e.g. gender) and respondents' perception about internet banking; and, whether the user and non-user perception differs.
- Study has also tried to examine whether there is any relation with the demographic variable (e.g. age) and respondents' perception about internet banking for convenience.

1.5. Research Hypotheses

To achieve the above objective of the study, the following hypotheses had been formulated and will be tested:

Ho₁: There is no significant difference between internet banking and age.

Ho₂: There is no significant difference between internet banking and Gender.

Ho₃: There is no significant difference between internet banking and Employment type.

Ho₁₄: There is no significant difference between internet banking and Education of respondents.

Ho₁₅: There is no significant difference between internet banking and Family Income of respondents.

1.6 Research Design:

1.6.1 Source of data collection

The study has also attempted to employ primary data as well as secondary data. Descriptive method is used for research design. Secondary data has been collected from different published sources. Primary data has also been collected by structured survey.

The population of the study consists of all types of respondents who customers are visiting commercial banks in the cities taken for the purpose of the study. The target respondents would consist of customers having accounts with commercial banks, customers who have taken a loan, other type of customers availing other banking services. For the sake of simplicity, we target the customers of four commercial banks namely Axis Bank, HDFC Bank, Bank Of Baroda and ICICI. The selected cities that were selected were Jamnagar, Rajkot, Bhavnagar and Surendranagar. For the purpose of our study, we can take more samples which would give us a more precise estimate but this would be time consuming and would involve several constraints. Considering these several constraints, the researcher has selected total 400 respondents for the study purpose and 100 respondents for the individual city. The collection of the data has been carried out by the researcher through primary data collection method of “questionnaire”. A combination of open end and close end questions will be used for the purpose of questionnaire.

1.6.2 Techniques of Data Collection

The survey has been created through online mode and link has been sent to the respondents from India using convenience sampling. 400 respondents had been approached in person to collect the required information for the purpose of this study. In the questionnaire, various internet banking applications will be included. Later, structured questionnaire had been developed for the purpose of data collection. All items had been measured by responses on a five-point Likert scale in agreement/ relevance with statements, ranging from 1= strongly Disagree/ Completely Irrelevant to 5= Strongly Agree/ Completely Relevant.

1.7 Analysis & Interpretation of Data

Testing Hypothesis:

Testing hypothesis provides the scientific base for the interpretation. Herewith, stated hypothesis are tested with the help of various parametric and non parametric tests as mentioned below.

Ho₁: There is no significant difference between internet banking and age.

Descriptives								
Internet Banking								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18 to 28 Years	187	3.4122	.46362	.03390	3.3453	3.4791	1.79	4.55
29 to 39 Years	191	3.4879	.44589	.03226	3.4242	3.5515	2.57	4.54
40 Years and above	22	3.4754	.49259	.10502	3.2570	3.6938	2.60	4.16
Total	400	3.4518	.45721	.02286	3.4069	3.4968	1.79	4.55

Test of Homogeneity of Variances			
Internet Banking			
Levene Statistic	df1	df2	Sig.
.541	2	397	.583

Significance value is 0.583 > 0.10, So Levene test accept the assumption of equal variance of internet bank practices among various age groups. Henceforth for testing hypothesis parametric test should be used.

ANOVA					
Internet Banking					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.554	2	.277	1.328	.266
Within Groups	82.852	397	.209		
Total	83.406	399			

It is observed that the significance value is $0.266 > 0.05$, Null Hypotheses is not rejected and concluded that **there is no significant difference between internet banking practices and age.**

Ho₁: There is no significant difference between internet banking and Gender.

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Internet Banking	400	3.4518	.45721	1.79	4.55

One-Sample Kolmogorov-Smirnov Test		
Internet Banking		
	N	400
Normal Parameters ^a	Mean	3.4518
	Std. Deviation	.45721
Most Extreme Differences	Absolute	.059
	Positive	.059
	Negative	-.040
Kolmogorov-Smirnov Z		1.185
Asymp. Sig. (2-tailed)		.121
a. Test distribution is Normal.		

Running the normality test it is found that the sample distribution is the normal (0.121 > 0.005) distribution. Hence Normality of the sample does validate the T test for testing the hypothesis.

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Internet Banking	Male	183	3.3675	.41339	.03056
	Female	217	3.5229	.48067	.03263

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	2.381	.124	-3.432	398	.001	-.15541	.04528	-.24443	-.06639
Equal variances not assumed			-3.476	397.841	.001	-.15541	.04471	-.24330	-.06752

Here, at 5 % level of significance the value of the T test is less than 0.05 (0.001 < 0.05) it is concluded that **There is significant difference between internet banking and Gender**

Ho₁₃: There is no significant difference between internet banking and Employment type.

Descriptives								
Internet Banking								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Self Employed	258	3.4716	.45996	.02864	3.4152	3.5280	1.79	4.55
Government Employed	67	3.4125	.37839	.04623	3.3202	3.5048	2.79	4.11
Not employed	62	3.4365	.51782	.06576	3.3050	3.5680	2.57	4.49
Others	13	3.3338	.48551	.13466	3.0404	3.6272	2.68	4.10
Total	400	3.4518	.45721	.02286	3.4069	3.4968	1.79	4.55

Test of Homogeneity of Variances			
Internet Banking			
Levene Statistic	df1	df2	Sig.
1.535	3	396	.205

Significance value is $0.205 > 0.10$, So Levene test accept the assumption of equal variance of internet bank practices among various employment types. Henceforth for testing hypothesis parametric test should be used.

ANOVA					
Internet Banking					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.400	3	.133	.637	.592
Within Groups	83.006	396	.210		
Total	83.406	399			

It is observed that the significance value is $0.592 > 0.05$, Null Hypotheses is not rejected and concluded that **there is no significant difference between internet banking practices and Employment types.**

Robust Tests of Equality of Means				
Internet Banking				
	Statistic ^a	df1	df2	Sig.
Welch	.654	3	49.551	.584
Brown-Forsythe	.617	3	77.796	.606
a. Asymptotically F distributed.				

Robust Tests of Equality between means like Welch and Brown- Forsythe ($0.584 > 0.05$ & $0.606 > 0.05$) also confirmed that **there is no significant difference between internet banking practices and Employment types.**

H₀₄: There is no significant difference between internet banking and Education of respondents.

Descriptives								
Internet Banking								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below Primary	6	3.1875	.13867	.05661	3.0420	3.3330	3.02	3.37
Primary	3	3.5238	.08439	.04872	3.3142	3.7334	3.43	3.59
Higher Secondary	44	3.4886	.43222	.06516	3.3572	3.6200	2.57	4.49
Graduation	176	3.3956	.47072	.03548	3.3256	3.4657	1.79	4.55
Post Graduation	156	3.5197	.45025	.03605	3.4485	3.5909	2.60	4.54
Above Post Graduation	15	3.3881	.48070	.12412	3.1219	3.6543	2.61	4.30

Descriptives								
Internet Banking								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below Primary	6	3.1875	.13867	.05661	3.0420	3.3330	3.02	3.37
Primary	3	3.5238	.08439	.04872	3.3142	3.7334	3.43	3.59
Higher Secondary	44	3.4886	.43222	.06516	3.3572	3.6200	2.57	4.49
Graduation	176	3.3956	.47072	.03548	3.3256	3.4657	1.79	4.55
Post Graduation	156	3.5197	.45025	.03605	3.4485	3.5909	2.60	4.54
Above Post Graduation	15	3.3881	.48070	.12412	3.1219	3.6543	2.61	4.30
Total	400	3.4518	.45721	.02286	3.4069	3.4968	1.79	4.55

Test of Homogeneity of Variances			
Internet Banking			
Levene Statistic	df1	df2	Sig.
2.294	5	394	.045

Significance value is $0.045 < 0.10$, So Levene test does not accept the assumption of equal variance of internet bank practices among various education levels. Henceforth for testing hypothesis parametric test should not be used.

Kruskal- Wallis Test

Ranks			
	Educational Qualification	N	Mean Rank
Internet Banking	Below Primary	6	118.83
	Primary	3	221.83

	Higher Secondary	44	208.34
	Graduation	176	187.12
	Post Graduation	156	217.88
	Above Post Graduation	15	182.10
	Total	400	

Test Statistics ^{a,b}	
	Internet Banking
Chi-Square	9.565
df	5
Asymp. Sig.	.029
a. Kruskal Wallis Test	
b. Grouping Variable: Educational Qualification	

Significance value $0.029 < 0.05$ clears that Null hypothesis is not accepted and concluded that **there is significant difference between internet banking and Education of respondents.**

Ho₁: There is no significant difference between internet banking and Family Income of respondents.

Descriptives								
Internet Banking								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 1 Lakh	109	3.4858	.43119	.04130	3.4039	3.5677	2.57	4.31
1 to 2 Lakhs	137	3.4627	.51797	.04425	3.3752	3.5502	1.79	4.55
2 to 3 Lakhs	79	3.4197	.42464	.04778	3.3246	3.5148	2.57	4.31
3 to 4 Lakhs	50	3.4935	.37051	.05240	3.3882	3.5988	2.71	4.51

4 to 5 Lakhs	16	3.1983	.43567	.10892	2.9661	3.4304	2.61	4.10
Above 5 Lakhs	9	3.3750	.47524	.15841	3.0097	3.7403	2.83	4.00
Total	400	3.4518	.45721	.02286	3.4069	3.4968	1.79	4.55

Test of Homogeneity of Variances			
Internet Banking			
Levene Statistic	df1	df2	Sig.
2.479	5	394	.032

Significance value is $0.032 < 0.10$, So Levene test does not accept the assumption of equal variance of internet bank practices among various income groups. Henceforth for testing hypothesis parametric test should not be used.

Kruskal- Wallis Test

Ranks			
	Family Income	N	Mean Rank
Internet Banking	Below 1 Lakh	109	209.52
	1 to 2 Lakhs	137	203.54
	2 to 3 Lakhs	79	190.95
	3 to 4 Lakhs	50	210.89
	4 to 5 Lakhs	16	138.59
	Above 5 Lakhs	9	181.17
	Total	400	

Test Statistics ^{a,b}	
	Internet Banking
Chi-Square	6.542
df	5

Asymp. Sig.	.257
a. Kruskal Wallis Test	
b. Grouping Variable: Family Income	

Significance value $0.257 > 0.05$ clears that Null hypothesis is accepted and concluded that **there is no significant difference between internet banking and Income of respondents.**

1.8 Universe & Sampling Plan

The present study had been based in the nature of an empirical study. This study has been based on primary data collected through online mode of interview and also through secondary sources. It may be beyond the capacity of the individual researcher to conduct a thorough investigation due to financial and time constraints. Convenience sampling would be used to select the units from the sample size.

1.9 Significance of The Research

While investigating all the variables and responses given by customers, this study had revealed that the consumer perceptions can be changed by conducting an awareness program, friendly usage, less charges, proper security and the best response to the services offered. This study will consider only those banks having internet connection.

Results through the study has helped to understand customer's perception and some actions that can be taken by the banks to increase their efficiently of service.

The results that has been obtained from the present study would be helpful to the policy makers, depositors, investors and other stakeholders to take decisions about improving the efficiency levels of commercial banks in Saurashtra. The present study has covered the comparative analysis in terms of operation of various banks using online mode of transactions in Saurashtra for a period of 7 years. It will also explore the preferences of banking customers towards online transactions as a preferred mode of transacting. This research has also tried to observe the effect of online banking on the banks operational efficiency, financial efficiency, capital adequacy ratio, decrease on the NPAs of commercial banks.

1.10 Limitations and Future Research

Although this research has been primarily based on the primary data from the users and non users of Internet banking, the findings cannot be generalized, as the research has been based on non probability sampling. This study has helped to successfully examine the major factors responsible for internet banking based on respondents' perception on various

internet applications; future research may include examining the factors importance. Future research may also consider the impact of other demographic variable like education.

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