

BANKERS' PERCEPTION ON VIRTUAL BANKING : AN EMPIRICAL INVESTIGATION

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ABSTRACT

This study attempts to find out whether virtual banking is beneficial for bankers. For this purpose, a survey of banker's perception on virtual banking has been conducted in Patna, the state capital of Bihar. In this study, the bankers are the heads of the branches of State Bank of India located in Patna. State Bank is the largest commercial bank of India. The scale used for measuring the perception of bankers on virtual banking has four dimensions namely, operating efficiency, productivity, customer satisfaction and profitability. The primary data for the study has been collected from the bankers through structured questionnaires. Tools used for the data analysis are: some basic descriptive analysis like mean and standard deviation and one sample t-test. Results of data analysis and hypothesis-testing shows that virtual banking is beneficial for banks. So banks may use virtual banking to attract and retain their customers and thereby increase their profits. Suggestions are given for this purpose. This can be done by increasing the awareness and utility of virtual banking among the public by more publicity, educating people for using virtual banking products, increasing security level by using biometric products, increasing service quality level, minimising website outage, providing innovative products and targeting young, resourceful and tech-savvy customers.

Keywords: *Virtual banking, operation efficiency, productivity, customer satisfaction, profitability.*

INTRODUCTION

In India, it has become a necessity for banks to provide virtual banking services due to the competitive market environment, continuous innovation taking place in the field of information and communication technology (ICT) and customer pressures.

Broadly speaking, virtual banking denotes the provision of banking and related services through extensive use of information technology without direct recourse to the bank by the customer (RBI, 1998-99).

The principal types of virtual banking services in India are ATM (Automated Teller Machine) services, Internet Banking, Mobile Banking, NEFT (National Electronic Fund Transfer) and RTGS (Real Time Gross Settlement) system. They are additional or alternative delivery channels offering quality banking services with speed, accuracy, convenience and real time access to the customers. Virtual banking provides alternative to extend banking hours. As a result, crowd at bank counter may be reduced. Virtual banking offers the convenience of anywhere and anytime banking and related services to the customers.

Banks are providing virtual banking services to increase their operating efficiency, productivity and customer satisfaction so that their profitability may be increased. Therefore, this study attempts to find out whether virtual banking is beneficial for banks. For this purpose, a survey of bankers' perception on virtual banking has been conducted in Patna, the state capital of Bihar in India. In this study, the bankers are the heads of the branches of State Bank of India located in Patna. State Bank of India is the largest commercial bank in India.

OBJECTIVES

1. To study the emergence of virtual banking in India.
2. To find out whether virtual banking is beneficial for banks.
3. To give suggestions on the basis of findings of the study.

REVIEW OF LITERATURE

The review of literature shows the emergence of virtual banking in India, the benefits of virtual banking to banks and the limitations of virtual banking.

The Emergence of Virtual Banking in India

In India, the emergence of virtual banking took place in the post-liberalisation era (after 1991). With the entry of foreign and private banks and the development of information and communication technology (ICT), it became essential for Indian banks to provide virtual banking services in order to survive and grow. The need of the hour is that, public sector banks should adopt technology and caution approach in order to fight effectively with the new generation private sector banks (T.M. Bhasin, 2003)

Now Indian banks are investing heavily in technologies such as branch automation and computerization, core banking, automated teller machine (ATM), internet banking, mobile banking, data warehousing etc. ICT innovation in the previous few years have changed the landscape of banks in India (Mittal and Dhingra, 2007).

ET Bureau (2011), "The Reserve Bank of India has asked banks to use technology more effectively with a focus on bringing down costs and improving customer services in its information technology (IT) vision document for 2011-17". Further, the committee, in the report, specifies the role of IT in Banking "with the major objective being balancing the three Cs-cost, control and customer services."

Indian Banks wholeheartedly embraced technology. This paved the way for business process automation in banking, which enhanced customer service, reduced manpower costs and increased profitability (Pillai and Sreedhar, 2012).

Benefits of Virtual Banking to Banks

Vijesh R.et.al. (2011), in the research paper mentions the benefits of providing valuable services through delivery channels, "Deliver the services simpler, deliver the services fast, deliver the services securely, acquires new customers, retain their existing customers, keep customers highly satisfied on the services provided, lower operational cost, lower transaction processing cost, wider customer base irrespective of geographical barrier, higher profits on the bottom line."

N. Jamaluddin (2013) concluded that information technology has played a vital role in the advancement of banking system. The reach of Indian Banking to every individual is possible because of computerisation process adopted by banking sector. Information technology has not only simplified the operation but it has also given a great comfort to an individual who does not have a good knowledge of I.T. but need to access banking in an optimum manner.

Moutinho et.al.(1997) pointed out that each ATM could carry out the same, essentially routine transactions as do human tellers in branch offices, but at half the cost and with a four-to-one advantage in productivity.

A reduction in the percentage of customers visiting banks with an increase in alternative channels of distribution will also minimise the queues in the branches (Thornton and White,2001). Bank employees and office space that are released in this way may be used for some other profitable ventures (Birch and Young, 1997). This ultimately leads towards improved customer satisfaction and the institutions bottom line (Thornton and White,2001).

Jeevan (2000) observed that the internet banking enables banks to offer low cost and high value added financial services.

Hasan (2002) found that online home banking has come out as a significant strategy for banks to attract and retain customers. About 75 percent of the Italian banks have adopted some form of internet banking during 1993-2000.

Mols(2001) acknowledged that the internet banking is an innovative distribution channel that offers less waiting time and a higher spatial convenience than traditional branch banking with significantly lower cost structure. Internet banking reduces not only operational cost to the banks but also leads to higher levels of customer satisfaction and retention.

Robinson (2000) argued that the online banking extends the relationship with the customers through providing financial services right into the home or office of customers. The banks may also enjoy the benefits in terms of increased loyalty and satisfaction of customers (Oumlil and Williams, 2000)

Mobile banking lowers the cost of delivery including cost of both to the banks of building and maintaining a delivery channel to banks and to customers of accessing services (Ivantuary and Mas, 2008)

Limitations of Virtual Banking

In virtual banking, there is lack of human touch. customers do not have any relationship with the personal banker. But this relationship increases the possibility of selling the customer another service that they need and also promotes a good image and enhances customer loyalty (Moutinho et.al,1997)

Sathye (1999) found that lack of awareness and security concerns were the main problems responsible for the non-adoption of internet banking by the customers in Australia.

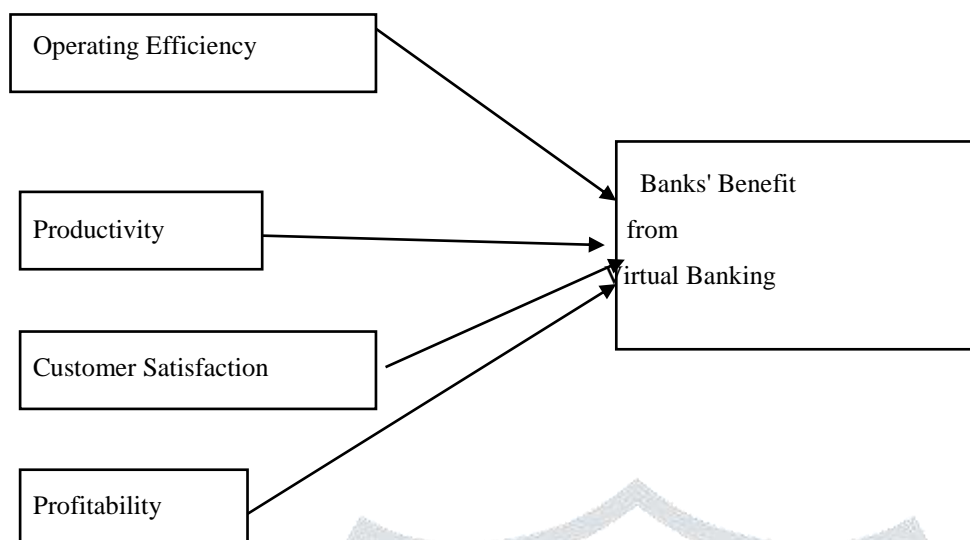
Major apprehensions for the non-adoption of e-banking lies in security concerns and lack of awareness of online banking (Flavin, Torresand and Guinaliu, 2004)

NEED OF THE STUDY :-

The above review of literature shows that many studies have been done on virtual banking. But the perception of human being changes with time. Thus, the previous studies became less relevant and the need for fresh study arises. To fill up this gap, the present study has been undertaken. It attempts to find out whether virtual banking is beneficial for banks.

CONCEPTUAL FRAMEWORK :

In order to find out whether virtual banking is beneficial for banks, the present study was undertaken. For this purpose, a conceptual framework of the study was framed as follows:



Conceptual Framework of the Study

Operating efficiency: One of the important dimensions of Banks' Benefit from Virtual Banking, is its operating efficiency. Operating efficiency means to maximize output with minimum input. In case of virtual banking, its operating efficiency increases the quality and quantity of banking services with minimum use of resources like men money, material and machine. Variables like, increase in speed of transaction, increase in accuracy rate of transaction, security of data and rate of accessibility are the important ingredients for measuring operating efficiency of virtual banking. It leads to cost reduction and increased productivity. In this study, operating efficiency of virtual banking will be denoted by OP.

Productivity : Productivity = Total Output/Total Input Productivity is the arithmetical ratio between the amount produced and amount of resources used in the production. Productivity is the yard stick of operating efficiency. Variables like, decrease in dependency of customer on bank employees due to virtual banking services, virtual banking offers extended banking hours, increased customer coverage and reduction in transaction cost are the important ingredients for measuring the productivity of virtual banking. It leads to increased profitability. In this case study, productivity of virtual banking will denoted by PD.

Customer Satisfaction : Customer satisfaction is based on the perception of customers about the service. If the perception of the services is higher than the expectations of the customers, customer will be satisfied otherwise dissatisfied. The variables like banks provide knowledge to customers for using virtual banking, switch over rate of customers from traditional to virtual banking and increase in number of customers accessing virtual banking services are the important indicators of customer satisfaction from virtual banking. Customer satisfaction leads to profitability for bankers. In this study, customer satisfaction from virtual banking will be denoted by CS.

Profitability : It refers to the profit making ability of the enterprise. Profitability is used as a yard stick of measuring operational efficiency. Variables like overall improvement in the performance of banks due to virtual banking, improvement in bankers- customers relations due to virtual banking services and retention rate of customers increased due to virtual banking services are the important ingredients for measuring the profitability of virtual

Research Variables – In this study, there were two types of research variables. These are:

- Dependent Variable** – In this case, Banks' Benefit from Virtual Banking is the dependent variable.
- Independent Variable** – In this case, operating efficiency, productivity customer satisfaction and profitability are independent variables.

HYPOTHESIS

Ho: Virtual banking is not beneficial for banks.

H1: Virtual banking is beneficial for banks .

Hypothesis framed

Mathematically, Banks' Benefit = f (OP, PD, CS, PR)

Statistically stated,

$$H_0 : \mu = 2.5$$

$$H_1 : \mu > 2.5$$

Where, μ = Mean score of Bankers' Perception on Banks' Benefit from Virtual Banking

If $\mu > 2.5$, then Virtual Banking is beneficial for banks

RESEARCH METHODOLOGY

The research methodology used only quantitative data to validate the study.

Sampling Design

Sampling design refers to the process of selecting samples from a population. In the present study, a probability sampling design-simple random sampling without replacement (SRSWOR) was used. In the city of Patna, almost 10% of SBI branches in the state of Bihar, are located. The total number of SBI branches in Patna is 100. Out of these 100 branches, 40 branches were selected for the survey by using SRSWOR method. The respondents were the heads of these selected branches of SBI in Patna. Thus, the selected sample size was 40 and sampling frame was 100.

Data Collection

For the present study, questionnaire for Bankers were distributed to a sample of 40 respondents. In order to collect data, the questionnaire was administered by hand delivery to the respondents in the months of April and May 2016. Out of these 40 questionnaires, one questionnaire was incomplete. So 39 questionnaires were usable.

The questionnaire was structured and written in English language. It contained 14 items. These items indicated the Banks' Benefit from Virtual Banking. To measure the Bankers' Perception or level of agreement on Banks' Benefit from Virtual Banking, a measurement instrument was used, based on four dimensions. These four dimensions and the number of items included in each dimensions is shown as below:

Dimensions		Number of Items
1.	Operating efficiency	4
2.	Productivity	4
3.	Customer satisfaction	3
4.	Profitability	3
Total-4		Total-14

The bankers' perception on Banks' Benefit from virtual banking were captured on the basis of 5 points Likert scale. These five points and their respective score values in the scale are given as under:

Points of Scale	Assigned score
Very large extent	5
Large extent	4
Small extent	3
Very small extent	2
Not at all	1

After data collection, data entry was done by using MS Excel 2007. Then data were transferred to Statistical Package of Social Science (SPSS 20) for reliability analysis and data analysis.

Reliability and Validity of the Scale :

It was ensured that the scale of measurement instrument used in the study was substantially reliable and valid by using SPSS 20

In the present study, multiple item scale was used. So Cronbach alpha method was used to measure the reliability of the scale. It was used to test the internal consistency of the multiple item scale.

The following table shows that all dimensions have appropriate reliability.

Reliability Statistics

S.N.	Construct/Dimension	Items	Cronbach's Alpha
1	Operating efficiency	4	0.753
2	Productivity	4	0.658
3	Customer satisfaction	3	0.869
4	Profitability	3	0.819
	Complete scale	14	0.901

(Source : Primary Data collected through the Survey of Bankers Perception on the Virtual Banking Services)

The reliability of the scale is good. It's alpha is 0.90.

To ensure validity of the questionnaire, it was designed to obtain needed data by ensuring that the items are related to the research objective and hypothesis. Moreover, all statements or items were made close-ended. The statements or items were made simple and concise, making them easy to understand. The questionnaire was relatively short in length, encouraging respondents to fill them on time. Also some research experts and respondents were asked to review and validate the questionnaire.

Data Analysis

The SBI branches of all the 39 respondents were providing ATM services, Internet Banking, Mobile Banking, NEFT and RTGS. This was possible because all the branches of SBI located in Patna are CBS (Core Banking System) enabled.

Tools used for Data Analysis

The main tool used for data analysis was one sample t-test along with some basic descriptive analysis.

Descriptive Statistics

It describes the sample with the help of summary information like mean, standard deviation etc. Descriptive statistics of the sample as shown in the table given below, indicates that mean scores of Bankers' Perception relating to the four dimensions of Banks' Benefit from Virtual Banking is ranging between 4.5 to 4.8 out of the maximum score of 5. The table shows that Bankers' Perception regarding operating efficiency and productivity dimensions is higher than customer satisfaction and profitability dimensions. This shows that although operating efficiency (with mean score of 4.8) and productivity (with mean score of 4.7) dimensions have got high bankers' perception, there is scope for bankers to improve further the level of Customer Satisfaction (with mean score of 4.5) so that their level of profitability (with mean score of 4.6) from virtual banking can increase more.

Descriptive statistics

Dimensions	N	Minimum	Maximum	Mean	Standard Deviation	Variance
Operating efficiency	39	4.00	5.00	4.8077	0.32170	0.103
Productivity	39	3.25	5.00	4.7051	0.40095	0.161
Customer satisfaction	39	3.00	5.00	4.5043	0.59664	0.356
Profitability	39	3.00	5.00	4.6068	0.55605	0.309
Overall Bankers' Perception	39	3.58	5.00	4.6560	0.39615	0.157

(Source : Primary Data collected through the Survey of Bankers Perception on the Virtual Banking Services)

One-Sample T-Test

Sample size – One-sample t-test is applied on small sample (i.e, sample size ≤ 30) when the population standard deviation is unknown. But when one-sample t-test is one-tailed the sample size should be 30 to 50 so that skewness in the sample may be avoided. The normality of data increases with the increase in sample size.

In the present study, one-sample t-test was used because the t-test was one-tailed (only lower limit was set) and sample size was 39 with unknown population standard direction. It was a simple random sample with interval type of data.

HYPOTHESIS TESTING

One-sample t-test was performed on the sample with a size of 39 by using SPSS 20. The hypothesis was tested at 5 percent level of significance with 38 degree of freedom (degree of freedom = $n - 1$). The test value was chosen as 2.5 because the maximum mean score of banks perception was 5.

If Bankers' Perception > 2.5 , Virtual Banking is beneficial for banks.

Statistically stated,

$$H_0 : \mu = 2.5$$

$$H_1 : \mu > 2.5$$

The overall bankers' perception on the banks' benefit from virtual banking have been summed up and tested for getting the results. The details are presented in the following table based on all the four dimensions of Banks' Benefit from Virtual Banking. The hypotheses were tested separately for all dimensions and also for overall bankers' perception.

One sample t-test

Test Value = 2.5					
Dimensions	t (Sample value)	df	Sig. (2-tailed)		Decision
Operating efficiency	44.798	38	0.00	p-value< ∞	Reject H ₀
Productivity	34.346	38	0.00	p-value< ∞	Reject H ₀
Customer satisfaction	20.979	38	0.00	p-value< ∞	Reject H ₀
Profitability	23.662	38	0.00	p-value< ∞	Reject H ₀
Overall Banker's Perception	33.988	38	0.00	p-value<∞	Reject H₀

Significance level = 0.05

(Source : Primary Data collected through the Survey of Bankers Perception on the Virtual Banking Services)

Decision Making

The Null hypothesis (H₀) will be rejected when:

1. Sample value of test statistic (t) > table value of t
2. Observed probability (p) < significance level (∞)

The table value of t with 38 degree of freedom at 10 percent level of significance for 2-tailed test and 5 percent level of significance for 1-tailed test is 1.686. The sample values of t for all dimensions including Overall Bankers' Perception are greater than 1.686. Therefore, H₀ for all dimensions were rejected.

In the computer printout, p-value for the test is given by 0.00 and significance is denoted as two tailed. The software gives p-value for 2-tailed test. But our problem is that of one tailed test. As we know that t-distribution is a symmetrical distribution and therefore, the relevant value of p for one tailed test would be the given figure in the computer printout divided by 2. Therefore, the relevant p remains 0.00. Now observed p- values for all dimensions are less than $\infty = 0.05$. Therefore, the null hypothesis is rejected in favour of the alternative hypothesis and it can be concluded that the virtual banking is beneficial for banks.

LIMITATIONS OF THE STUDY :-

1. Sample size was limited to the customers of state Bank of India, Patna.
2. Time played a vital constraint in the study.
3. The research methodology used only quantitative data to validate the study, excluding the qualitative data.
4. Biasness in the respondents response can not be ruled out.

FINDINGS AND DISCUSSIONS

The data analysis and hypothesis testing shows that virtual banking is beneficial for banks. The mean sources of Bankers Perception relating to four dimensions of Banks Benefit is ranging between 4.5 to 4.8 out of the minimum score of 5.00. The dimensions – operating efficiency (with mean score of 4.8) and productivity (with mean score 4.7) have got high bankers perception indicating that virtual banking is increasing the operating efficiency and productivity of the banking services. But the dimensions customer satisfaction (with mean score of 4.5) and profitability (with mean score of 4.6) indicate that there is scope for bankers to further improve the level of customer satisfaction so that they can attract and

retain more members of customers and increase their profitability upto a higher level. They should not be complacent and should provide innovative products.

CONCLUSION

On the basis of above finding, it can be concluded that virtual banking is beneficial for banks. The Bank's Benefit from virtual Banking has been measured by the mean score of Bankers' Perception on the four dimensions namely, operating efficiency, productivity, customer satisfaction and profitability. The study confirms on the basis of Banker's Perception survey that virtual Banking increases operating efficiency, productivity, customer satisfaction and profitability of bank and therefore virtual banking is beneficial for banks.

SUGGESTIONS

Following steps can be taken by the banks to exploit or encash the benefits of virtual banking for attracting and retaining the customers:

1. Increase the awareness and utility of Virtual banking among the public by more publicity.
2. Educate the people for using virtual banking products.
3. Security is the main concern of the customers of Virtual banking. So, the biometric products that are more safe, should be used by the banks. They should continuously upgrade their technology.
4. Banks should increase the level of customer satisfaction by increasing the service quality of virtual banking so that banks level of profitability from virtual banking may increase further.
5. Website the people for using virtual banking products.
6. Provide innovative virtual banking products.
7. Attract young, resources and tech-savvy customers that can use virtual banking products for a long time in future.

DIRECTIONS FOR FUTURE RESEARCH

This study is limited to a public sector bank located in the urban area. So future research work can be done in the following areas:

1. Comparing the Bankers Perception on Virtual Banking in public and private sector banks.
2. Comparing the Banker's Perception on virtual banking in urban and rural areas.

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