

# Virtual Banking Adoption in Public and Private Sector Commercial Banks of Indore City(M.P) India

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## Abstract

The present empirical study is a modest attempt to identify the factors which influence adoption of virtual banking in public and private sector commercial banks, confining to people of Indore region (Madhya Pradesh, India). The primary objective of this research is to get insight view of the reasons which play a dominant role in adoption of virtual banking services of public and private sector banks. Intended for this, a questionnaire was prepared and valid data was sought from 360 respondents using online banking for their banking transactions. The study identified 8 factors precisely, which impact the customers' adoption/usage of virtual banking services in public and private sector commercial banks. The result of this study will help banks to concoct new strategies or to formulate changes in existing ones, so as to satisfy the customers or develop new schemes and promotions to cater new customers.

Keywords: Virtual Banking, Public Sector Banks, Private Sector Banks, Indian Banking.

## Introduction

The quick expansion of information technology has imbibed into the lives of millions of people and introduced major changes in the worldwide economic and business atmosphere. Technological developments in the banking sector have speeded up communication and transactions for clients (Booz et al., 1997). Until the 1980s Indian banking was primarily held by [public banks, government was shielding these banks from all types of competition, both internal as well as external. Since economic reform, banking has undergone drastic changes, facing competition in the market. (Chaudhari and Halbrook, 2002). The competition posed by private and multinational banks force the public sector to adopt aggressive strategies , increase their presence and expand their customer base(Suresh Chandra et al.2003) Parasuraman et al. (1985) theorize that customers' perception regarding service quality depends upon the gap between what the customer expects and what they receive in service. Banks as service organizations should always be able to meet the needs and demands of those sophisticated customers effectively and efficiently in order to retain them. The Government of India enacted the IT Act, 2000 (Information Technology Act). This act came into effect from the 17th of October 2000. The purpose of this act, in context of banking, was to provide legal recognition to electronic transactions and other means of Electronic Commerce. Banking no longer is

regarded as a business dealing with money transactions alone but it also seems as a business related to information on all financial transactions (Padwal 1994). Increasing competition and variety in banking services have acted as a catalyst for the growing inclination of Indian Customers towards multinational banks (Moody's Banking Sector Report, 2008).

## Literature Review

**Tavishi and Santosh Kumar (2013)** studied the factors influencing the customers for the adoption of internet banking and mobile banking in India and investigated the influence of perceived usefulness, perceived ease of use and perceived risk on use of internet and mobile banking.

**Harinder S Gill and Saurabh Arora (2013)** analyzed in their study that though Public sector banks lack in technology as compared to Private Banks but they enjoy customer faith in the country. On the other hand, Private Banks gives better technology and more options of investments.

**Sabita Paul (2013)** described that current and prompt technological revolution altering the whole world has crucial impact on banking too. The data was collected from various commercial banks of Odisha, India. The research stresses that the marketing experts of banks should emphasize spreading the benefits of e-banking to customers to create awareness and attract them.

**Lakshmi Narayana.K et al. (2013)** focuses on investigating the major factors that influence online customers' satisfaction with the overall service quality of their banks. This study also helps in assessing the power of these factors in the context of Online (Internet) banking and would, therefore, help the bank management not only in improving the level of satisfaction but also strengthening the bond between the banks and their customers, thereby helping them to retain and/or expand their overall customer base.

**Rajesh Garg (2013)** concluded that Internet banking has gained wide acceptance internationally and seems to be fast catching up in India with more and more banks entering the fray. This is why, most, most modern banks instead of merely dealing with financial deposits and loan apply promote, and distribute the want-satisfying products, services and ideas to start its journey towards development of computer and E-commerce is rapidly expanding its wings across the globe and India is no exception to this phenomenon.

**Chitresh Coomer & Smarajit Sen Gupta (2017)** found that in selecting banks people put more emphasis on the factors which give them quick and convenient access to the banks' services , cost effective services and the quality of services rather than the factor relating to the marketing promotions and advertisements and peer group and friends influence . The study also found significant difference in bank selection factors on the basis of single or multiple usage, types of banks, place of residence and gender of users.

**Vandana Shrivastava & Dr. Yogendra K Verma (2017)** researched that the mobile banking is a technique to do banking conveniently. It has many positive features but brings with it many security issues and challenges which if unchecked, hinder the effective growth of this beneficial technique. So it is necessary that laws should be made very strong and competent so that the portion of crime reaches to negligible level and mobile banking can be made advantageous to digital as well as to potential users.

## Research Methodology

To proceed with the empirical research in a systematic way, the following research methodology has been adopted.

**Objective:** The basic objective of this research is to identify the factors influencing customer perception towards Virtual Banking in Public and Private sector commercial banks in Indore city (M.P).

## Sampling & Data Collection

Primary data is collected through use of structured questionnaire on Likert scale using Convenience sampling. To collect the data from customers of both the sectors, 4 banks from each sector were identified. The following were the banks:

### Public Sector Banks

1. State Bank of India
2. Union Bank of India
3. Punjab National Bank
4. Canara Bank.

### Private Sector Bank

1. ICICI Bank
2. Axis Bank
3. HDFC Bank
4. Kotak Mahindra Bank

The questionnaire was filled up by 400 respondents of different branches of above banks (50 respondents from each bank), of which 360 responses have been used for the study (180 from each sector).

**Table I**

**Demographic Profile of Respondents Part A**

Sector	Bank	Gender	
		Male	Female

<b>Public Sector</b>	State Bank of India	26	19
	Union Bank of India	28	17
	Punjab National Bank	21	24
	Canara Bank	22	23
<b>Private Sector</b>	ICICI Bank	20	25
	Axis Bank	23	22
	HDFC Bank	26	19
	Kotak Mahindra	28	17

**Table II**  
**Demographic Profile of Respondents Part B**

Education	Income	Age	Occupation			
			Student	Housewife	Business/Self Employed	Employed /were Employed
<b>Graduate</b>	Rs.2 lakh to Rs.5 lakh	18 to 35 years	30	9	4	3
		36 to 55 years	4	16	6	4
		56 years and older	1	5	4	5
		<b>Total</b>	<b>35</b>	<b>30</b>	<b>14</b>	<b>12</b>
	Rs.5 lakh to Rs.15 lakh	18 to 35 years	-	-	16	3
		36 to 55 years	-	-	6	13
		56 years and older	-	-	4	10
		<b>Total</b>	<b>-</b>	<b>-</b>	<b>26</b>	<b>26</b>
	Rs.15 lakh & above	18 to 35 years	-	-	6	8
		36 to 55 years	-	-	3	6
		56 years and older	-	-	5	2
		<b>Total</b>	<b>-</b>	<b>-</b>	<b>14</b>	<b>16</b>
<b>Post Graduate</b>	Rs.2 lakh to Rs.5 lakh	18 to 35 years	25	2	8	1
		36 to 55 years	3	8	7	8
		56 years and older	4	5	5	8
		<b>Total</b>	<b>32</b>	<b>15</b>	<b>20</b>	<b>17</b>
	Rs.5 lakh to Rs.15 lakh	18 to 35 years	-	-	8	8
		36 to 55 years	-	-	14	13
		56 years and older	-	-	9	13

		<b>Total</b>	-	-	<b>31</b>	<b>34</b>
	Rs.15 lakh & above	18 to 35 years	-	-	5	6
		36 to 55 years	-	-	7	6
		56 years and older	-	-	6	8
		<b>Total</b>	-	-	<b>18</b>	<b>20</b>

**Table III****KMO and Bartlett's Test for sample Adequacy**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.760
Bartlett's Test of Sphericity	Approx. Chi-Square	2.981E3
	Df	666
	Sig.	.000

Source: SPSS16.0

Table III indicates that KMO Measure of sample adequacy is significant as test value is greater than 0.60 at 0.760 and Bartlett's Test of Sphericity is also found to be significant ( Approx. Chi square 2.981E3,Df=666,Sig=0.000). This indicates that the data set is fit to perform Factor Analysis.

After testing the accuracy of sample next step is to find out factors with the use of factor analysis. The first step is to find out communalities. The communalities measure the percent of variance in a given variable explained by all the factors. That is, the communality is the squared multiple correlation of the variable using the factors as predictors. Communality of a variable is the sum of squared factor loadings for that variable (row) and thus is the percent of variance in a given variable explained by all the factors. In the communality chart, SPSS labels this column as "initial" communalities. The "extracted" communalities are the percent of variance in a given variable explained by the factors which are extracted, which will usually be fewer than all the possible factors, resulting in coefficients less than 1.0. (Table 2).The researcher extracted 8 factors for analysis. Table 3 presents the total variance of the observed variables explained by each of the principal components/factors. The "initial eigenvalues and "extracted sums of squared Loadings" columns are the same, except that the latter only lists factors which have been extracted.

**Table IV****Communalities**

Variables	Initial	Extraction
Ease through devices	1.000	.404
Easy access to data	1.000	.300
Info is clear and understandable	1.000	.307

used any time of day	1.000	.539
convenience of cash handling	1.000	.433
faster transactions	1.000	.415
faster account summary	1.000	.412
response time of online banking system	1.000	.439
accurate and relevant information	1.000	.479
efficiency by faster modes of banking	1.000	.513
efficiency of automotive machines	1.000	.397
accuracy as human error is less	1.000	.526
Phishing is discouraging	1.000	.564
eliminates risk of carrying cash	1.000	.599
privacy of customers is maintained	1.000	.538
info of cards is safe	1.000	.411
reliability of security features	1.000	.547
environmental savvy	1.000	.472
cost effective than traditional banking	1.000	.454
service charge of cards is low	1.000	.560
flexible ways to search info	1.000	.417
provides latest info of share markets	1.000	.330
helps in financial planning	1.000	.467
provides investment advices	1.000	.479
provides account handling services	1.000	.559
provides info about future payments	1.000	.420
prestigious than traditional banking	1.000	.378
Govt. insistence to curb black money	1.000	.465
support from customer care	1.000	.519
Has bright future and major scope.	1.000	.310

Extraction Method: Principal Component Analysis

**Table V**  
**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.988	13.293	13.293	3.988	13.293	13.293	2.941	9.805	9.805
2	1.635	5.451	18.745	1.635	5.451	18.745	1.774	5.914	15.718
3	1.504	5.012	23.757	1.504	5.012	23.757	1.664	5.547	21.265

4	1.420	4.734	28.490	1.420	4.734	28.490	1.658	5.528	26.794
5	1.371	4.570	33.060	1.371	4.570	33.060	1.516	5.052	31.846
6	1.309	4.362	37.422	1.309	4.362	37.422	1.404	4.681	36.527
7	1.237	4.122	41.544	1.237	4.122	41.544	1.355	4.516	41.043
8	1.191	3.969	45.513	1.191	3.969	45.513	1.341	4.470	45.513
9	1.134	3.779	49.292						
10	1.093	3.643	52.935						
11	1.055	3.517	56.451						
12	1.009	3.363	59.815						
13	.950	3.165	62.980						
14	.892	2.974	65.954						
15	.876	2.919	68.873						
16	.845	2.818	71.691						
17	.832	2.774	74.465						
18	.773	2.575	77.040						
19	.733	2.443	79.483						
20	.724	2.413	81.897						
21	.702	2.341	84.238						
22	.651	2.169	86.406						
23	.621	2.071	88.478						
24	.596	1.987	90.465						
25	.564	1.879	92.344						
26	.518	1.728	94.072						
27	.497	1.655	95.727						
28	.457	1.523	97.250						
29	.447	1.490	98.740						
30	.378	1.260	100.000						

Extraction Method: Principal Component Analysis.

After the principal component matrix the next step is the “component matrix” which gives factor loadings. This is the central output of factor analysis. Factor loadings are the basis of giving label to the different factors. The rotation converged in 13 iterations through Varimax Rotation Technique. (Table VI)

**Table VI**  
**Rotated Component Matrix**

Variables	Component								
	1	2	3	4	5	6	7	8	
service charge of cards is low	.704								<b>Factor 1</b>

privacy of customers is maintained	.658				
eliminates risk of carrying cash	.636				
accuracy as human error is less	.587				
info of cards is safe	.516				
provides info about future payments	.471				
prestigious than traditional banking	.384				
faster account summary		.602			
support from customer care		.508			
flexible ways to search info		.468			<b>Factor2</b>
provides latest info of share markets		.451			
provides investment advices		.398			
cost effective than traditional banking		.640			
Has bright future and major scope.		.472			<b>Factor 3</b>
environmental savvy		.470			
efficiency by faster modes of banking		.373			
reliability of security features			.686		<b>Factor 4</b>
response time of online banking system			.605		
used any time of day			.718		<b>Factor 5</b>
faster transactions			.465		
provides account handling services			.457		
convenience of cash handling			.547		<b>Factor 6</b>
Ease through devices			.531		
Easy access to data			.493		
Phishing is discouraging			.674		<b>Factor 7</b>
accurate and relevant information			.506		
helps in financial planning			.453		
Govt. insistence to curb black money				.564	<b>Factor 8</b>
Info is clear and understandable				.490	
efficiency of automotive machines				.461	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization a. Rotation converged in 13 iterations.

### Results and Findings

The study has successfully identified following factors that affect the overall adoption of virtual banking by customers in the Indore city. The following are the factors identified:

1. **Congenial/Tranquil Factor:** Congenial factor makes virtual banking user friendly. Customers consider it as relaxing, peaceful and calm approach in accessing banking services. The variables like



easy access to data, fast transactions, can be used anytime of the day are some of the amiable banking services that customers enjoy.

2. **Mechanical Factor:** mechanical factor is related with the automated services which help customers do banking transactions smoothly. The easy use of devices like ATMs, POS machines motivates customers to adopt virtual banking.
3. **Societal/Progressive Factor:** virtual banking is liberal method of doing banking transactions. It doesn't involve customary methods to withdraw amount or transfer funds. These types of activities involve greater reliability in security features and require lesser response time from banking system. Virtual Banking is the need of the hour which is continuous aspiring factor in the development of Indian economy.
4. **Swift Factor:** Swift factor takes into account the rapid transactions and time saving feature of virtual banking. Investment advices, changes in market, account summary details all are just 1 click away to the user. The immediate reports of withdrawals or deposits via SMS or email appeals to the customer.
5. **Economic/Cost-Effective Factor:** virtual banking provides monetary benefits also to the user. It saves the cost of travelling to different branch locations of banks. Also, the service charges of holding a bank card (debit or credit) are quite nominal which makes it pocket friendly.
6. **Anticipatory Factor:** certain proactive, cautious and non-aggressive features related to information sharing in virtual banking like providing latest and updated information on the website, giving inputs about future payments, keeping the information of card holders safe etc. Attract customers in a larger way as they don't have to seek information from an already overburdened, irritated employee of a bank without the surety of getting response.
7. **Documentation Factor:** the very thing that virtual banking is environmental savvy which requires less paper work and all information is available in a mobile or a laptop or ATM machine, makes it attractive to customers.
8. **Assertive Factor:** Assertive factor includes the positive forces in the external environment of the customer which encourages them to adapt Virtual Banking. The continuous insistence by the Government to go cashless , adopt online banking to help reduce growth of black money inspires customers not just for the safety of their funds but of whole society too.

## Conclusion

The research revealed that there are number of factors which affect the adoption of virtual banking services by customers. Conveniences, technology improvements, availability of devices, exposure risk, Govt. Policies, are some of the major reasons for the adoption. The study gives useful insights regarding customers' preference of the variables which encourage them to adopt and gain from virtual banking. The researcher concludes that with the help of this study and proactive approach of the banks, findings can be

helpful to formulate strategies for their business development and expansion in growing cities of the country.

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## ANNEXURE -I

**Questionnaire**

Dear Respondent,

This survey is carried out as a part of my PhD dissertation from Vikram University Ujjain. The objective of the study is to identify the factors influencing the customers for the adoption and usage of virtual banking in Indore city. A comparative analysis of public and private sector banks will be done subsequently. Please be assured that your responses will be strictly confidential and will be used only by me for academic purpose only.

**Part –I General Information**

1. Name(optional):
2. Gender
  1. Male
  2. Female
3. Age:
  1. 18 to 35 years,
  2. 35 to 55 years
  3. 56 years and older
4. Education
  1. Graduate
  2. Post Graduate
5. Occupation
  1. Student
  2. Housewife
  3. Business/Self Employed
  4. Employed / were Employed
6. Income
  1. Rs. 2 Lakh to 5 Lakh
  2. Rs. 5 Lakh to 15 Lakh
  3. 15 Lakh and above
7. Do you have minimum 10 online transactions within 1 year?  
YES                      NO

**Part-II**

S.No	Particulars	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
1.	E banking can be done easily through mobile laptops or computer or POS machines.					
2.	Internet banking allows easy access to transaction data both recent and historical at one click.					
3.	Interaction with banking information system is clear and understandable.					
4.	E- banking services can be used at any time of day i.e. 24*7					
5.	ATM machines, cash counting machines or POS machines have made handling and disposition of					

	cash convenient.					
6.	NEFT, RTGS or easy inward facilities has made transactions faster.					
7.	Account information, balance enquiry or statement request can be done faster by mail, fax or email.					
8.	In general the response time of the online banking information system is consistent with no system crashing.					
9.	Internet banking provides accurate relevant and up to date information.					
10.	Faster log-in facility through website, performance of cards or easy and faster transfer of funds makes E Banking efficient.					
11.	Automotive bank machines like ATMs, POS's, cash counting machines are efficiently manage cash.					
12.	E banking increases accuracy as human error is less while doing payments.					
13.	Phishing (fraudulent attempts to obtain sensitive information like card details, password etc.) is the most discouraging factor in using E banking services.					
14.	Virtual banking eliminates the risk of carrying cash.					
15.	E channels of banking ensure privacy as the bank doesn't share details of customers.					
16.	The use of credit or debit card for online purchases or thorough POS is safe i.e. transactions are safe from third party.					
17.	Security features in Banks website (like non display of password, confirming through phone no. or mail, security questions) makes it more reliable.					
18.	Internet Banking transactions are environmental savvy with no paperwork.					
19.	The use of banking services is usually cost effective than spending time and conveyance spent for traditional banking.					
20.	E banking service charges for use of plastic cards is low.					
21.	Internet banking has more flexible ways to search for information.					
22.	Banks website provides latest information of financial market (order to buy or sell shares etc.).					
23.	Financial Planning can be done more effectively as loans and advances details are one click away.					
24.	E banking services provide efficient investment advisory services customized on customers transaction information.					
25.	Internet banking provides services of account opening, RD FD etc. according to needs and wants of customers promptly.					
26.	Future liabilities and payments are informed in advance to keep the minimum balance for the same.					
27.	Using E Banking services is more prestigious than queuing at bank hall.					
28.	The Government's insistence on adopting E banking curbs black money.					

29.	Problems of internet banking services are given prompt response and support from customer care.					
30.	Progress of internet banking in future is clear and has major scope.					

