Analysis of Strategic Risk In E-Banking In India

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Abstract

In this study, an attempt is made to analyze the bankers' viewpoint towards the factors responsible for strategic risk in e-banking, its potential impacts on the functioning of the banks and the risk management measures initiated by the selected public, private and foreign banks in India. A sample of 107, 104 and 100 bank employees is taken on the basis of judgement sampling from different branches of selected public, private and foreign banks respectively located in Haryana, Punjab, Chandigarh and Delhi. The primary data are collected with the help of pre-tested structured questionnaire on five point Likert Scale i.e. Strongly Disagree (SD), Disagree (A), Neutral (N), Agree (A), and Strongly Agree (SA). For coding and analyzing the data, weights are assigned in order of importance i.e. 1 to Strongly Disagree (SD), 2 to Disagree (A), 3 to Neutral (N), 4 to Agree (A), and 5 to Strongly Agree (SA). Statistical techniques such as mean, mode, standard deviation have been used for the analysis of data. ANOVA technique has been applied to validate the results of the study. The analysis shows that poor e-banking planning is found as the most important factor leading to the strategic risk in public and foreign banks, whereas poor e-banking investment decisions is considered as anmost important factor leading to the strategic risk in private sector banks. Further, adverse effect on profitability is viewed as the most potential impact on the functioning of public and private sector banks, whereas complexity in operations is considered as the most potential impact on the functioning of foreign banks. However, adequacy of management information system is viewed as the most adopting risk management measure followed by adequacy of design, delivery and pricing of services in the banks selected for the purpose of the study.

Key Words: Poor Planning, Poor Investment Decisions Management Information System, Adequacy of Design, Pricing of Services.

Introduction

Indian banking sector today is in the mid of an IT revolution. The public sector banks are in the process of making huge investment in technology. However, new private sector banks and foreign banks have an edge over public sector banks in the implementation of technological solutions. To be successful in this competitive environment, these banks have to take certain steps like cost reduction by economies of scale, better relations with the customers by providing better services and facilities to them. Pressure of performance and profitability will keep them on their toes all the times as the shareholders expect good performance along with good returns on their equity. The changing scenario and the new technologies like internet banking, mobile banking, improvement in payment technology, etc. can help in increasing the scale of economies in providing financial services. With the help of technology, the banks are now able to offer such products and services, which were difficult or impossible with traditional banking. But Indian banks have to go a long way before making themselves technology savvy. India has been able to take one step in this direction - physical cash has been replaced by anytime, anywhere money, but these are more pronounced in foreign and private sector banks. The public sector banks are far behind in technology integration. Thus, there is a huge scope for automation in the banking industry. The service based areas of banks have perhaps been the largest beneficiary of e-banking. ATMs, credit cards, internet banking, mobile banking which are already widely used around the world, have yet to reach their full potential in India. These services and products are all expected to grow in the coming years. No doubt, e-banking provides so many benefits, but face to face contact between the bank and the customer is absent in e-banking transactions, which causes most of the problems like credit card frauds, fraud of internet, etc. Rising competition is forcing the banks to find innovative ways to reduce the cost of transactions and increase the profitability. Technology has been one of the major enabling factors for enhancing the customer convenience in the products and services offered by the various banks and help in enhancing service range but the security of the transactions is a major concern. While it mitigates some risks, but induces some risks also. The main risks of e-banking are strategic risk, operational risk, credit risk, security risk, legal risk, cross-border risk, reputational risk, liquidity risk, strategic risk, country risk, etc. These risks are highly interdependent and events that affect one area of risk also have ramifications for a range of other risk categories.

Review of Literature

Various articles appeared in different journals on varied aspects of e-banking, which are restrictive in nature and do not give a comprehensive picture. Ahmad et. al. (2010) discussed the security issues on banking systems and stated that banking system intrusion shows the vulnerabilities that exist in financial institution and have been used by those illegal and unauthorized individuals or groups to intrude an area with secure environment. With the developing of high technology and information system around the world, banking system should not be left behind in terms of security system and should keep a sharp eye when there is any vulnerability in authentication and authorization that may lead to confidentiality, availability and integrity issues. Fatima (2011) concluded that biometric based authentication and identification systems are the new solutions to address the issues of security and privacy. One thing that can be said with certainty about the future of the biometrics industry is that it is growing. Biometrics is finding its ways into all kinds of applications beyond access control. It is expected that more and more information systems/computer networks will be secured with biometrics with the rapid expansion of internet and intranet. Adewuyi (2011) examined the concept of information technology, meaning of e-banking, origin of e-banking in Nigeria, areas of information and communication technology deployment by banks, guidelines on e-banking in Nigeria, reasons for automation of banking operation, challenges of regulatory on e-banking in Nigeria and the way forward. It is concluded that the adoption of TCT has influenced the content and quality of banking operations and presented a great potential for business re-engineering of Nigerian banks. Thus, investment in ICT should form an important component in the overall strategy of banking operation to ensure effective performance. Mermod (2011) analyzed the internet bank branches in Turkey with regard to many dimensions and found that online customers admit that internet bank branches are safe and cheaper and understandable and saving extra time. Internet banking usage rate have increased in the last years, depending on the increase of educated users. The usage rate of the internet banking is significantly related with the education levels. Education and also income level makes an important difference in the usage of internet banking facilities. Karimzadeh and Alam (2012) examined the e-banking challenges in India and concluded that legal and security, socio-cultural and management, banking issues are accepted as challenges for the development of e-banking. But there is less awareness regarding new technologies and unsuitable software which are ranked respectively as the highest and lowest obstacles in India. Osunmuyiwa (2013) examined the various aspects of online banking risks and the risk

management methods employed in mitigating these risks. It is widely recommended that banks that carry out online banking clearly should explain the privacy rule and communicate it to their clients. Banks can also make use of materials like vendor oversight, assignment sheet; excel spreadsheet for risk assessment for policies amongst so many created from a range of date resources to carry out data safekeeping. With this background, an attempt is made to examine the various aspects of strategic risk in e-banking in selected public, private and foreign banks in India, which is the current and prospective risk to earnings and capital arising from adverse business decisions or improper implementation of business decisions.

Research Design

Scope of the Study

The present study is confined to the analysis of strategic risk in e-banking in selected public, private and foreign banks in Haryana, Delhi, Chandigarh and Punjab.

Objectives of the Study

The main objective of the study is to examine the various aspects of strategic risk in e-banking in India. In this broader framework, the following are the specific objectives of the study:

1. To identify the factors leading to strategic risk in e-banking.
2. To examine the potential impacts of strategic risk in e-banking on the functioning of the banks.
3. To analyze the measures initiated for overcoming the strategic risk in e-banking.

Research Hypotheses

The following hypotheses have been formulated and tested to validate the results of the study:

H_{01}: There is no significant difference among the bankers' viewpoint towards the factors leading to strategic risk in e-banking.

H_{02}: There is no significant difference among the bankers' viewpoint towards the potential impacts of strategic risk in e-banking on the functioning on the banks.

H_{03}: There is no significant difference among the bankers' viewpoint towards the measures initiated to overcome the strategic risk in e-banking.

Sample Profile

For the purpose of the study, all the banks have been divided into three categories i.e. public, private and foreign banks. The banks selected from the public sector are State Bank of India

(SBI), State Bank of Patiala (SBP), State Bank of Bikaner and Jaipur (SBBJ), Punjab National Bank (PNB), Dena Bank (DB), Oriental Bank of Commerce (OBC), Canara Bank (CB), Central Bank of India (CBI), Union Bank (UB), Corporation Bank (CB), Bank of Baroda (BOB), Allahabad Bank (AB), Bank of India (BOI), Syndicate Bank (SB) and Indian Bank (IB). The banks selected from the private sector are ICICI Bank (ICICI), Axis Bank (AXIS), IDBI Bank (IDBI), HDFC Bank (HDBC), Yes Bank (YB), Kotak Mahindra Bank (KOTAK) and The Federal Bank Limited (FBL). Foreign banks include Standard Chartered Bank, City Bank, SBER Bank, State Bank of Mauritius, ABN-AMRO Bank N.V., HSBC Bank, American Express, BNP Paribas, Deutsche Bank and Barclays Bank.

Data Collection

The present study is of analytical and exploratory in nature. Accordingly, the use is made of primary as well as secondary data. The primary data are collected with the help of pre-tested structured questionnaire from the respondents (banks' officials) of selected banks on five point Likert Scale i.e. Strongly Disagree (SD), Disagree (A), Neutral (N), Agree (A), and Strongly Agree (SA). A sample of 375 respondents is taken from the various branches of the selected banks (125 respondents from each group). After examination, 107 questionnaires from public sector banks, 104 from private sector banks and 100 from foreign banks were found complete and used for further analysis. Besides questionnaires, interviews and discussion techniques were also used to unveil the information. On the other hand, the secondary data were collected mainly from RBI Monthly Bulletins, IBA Bulletins, Economic and Political Weekly, Bank Management, Professional Banker; and newspapers like The Economic Times, The Financial Express and The Hindu were also referred.

Data Analysis

The collected data were analyzed through descriptive statistical techniques like frequency distribution, percentage, mean, mode, standard deviation. For coding and analyzing the data, weights are assigned in order of importance i.e. 1 to Strongly Disagree (SD), 2 to Disagree (A), 3 to Neutral, 4 to Agree (A), and 5 to Strongly Agree (SA). To examine the bankers' viewpoints towards factors responsible for e-banking risks, their potential impacts on the functioning on the banks, and the risk management measures initiated by the selected banks; ANOVA technique was employed to test the hypotheses and validate the results. The analysis is in conformity with

the objectives of the study and the hypotheses formulated. The collected data are analyzed through PASW 18.0 version.

Results and Discussions

(A) Factors Leading to Strategic Risk

The factors leading to the strategic risk in the selected public, private and foreign banks are shown in Table-1 (a) and 1 (b).

Public Sector Banks

Most of the respondents i.e. 70 respondents (65.4 per cent) viewed the poor e-banking planning (Mean= 4.03, S.D. = 0.693) as the most important factor leading to the strategic risk, whereas poor e-banking investment decisions (Mean= 4.01, S.D. = 0.783) is considered as the next important factor by 68 respondents (63.6 per cent).

Table 1 (a): Factors Leading to Strategic Risk

Statements	N/P	Public Sector Banks					Private Sector Banks					Foreign Banks				
		SD	D	I	A	SA	SD	D	I	A	SA	SD	D	I	A	SA
Poor e-banking planning	N	1	2	12	70	22	1	5	8	61	29	2	5	12	45	36
	P	.9	1.9	11.2	65.4	20.6	1.0	4.8	7.7	58.7	27.9	2.0	5.0	12.0	45.0	36.0
Poor e-banking investment decisions	N	1	6	8	68	24	1	5	11	53	34	1	6	9	60	24
	P	.9	5.6	7.5	63.6	22.4	1.0	4.8	10.6	51.0	32.7	1.0	6.0	9.0	60.0	24.0

Note: N = Number of Respondents, P = Percent
Source: Survey

Table 1 (b): Factors Leading to Strategic Risk

Statements	Public Sector Banks			Private Sector Banks			Foreign Banks			ANOVA	
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	F df=2,308)	Sig.
Poor e-banking planning	107	4.03	0.693	104	4.08	0.797	100	4.08	0.929	0.136	0.872
Poor e-banking investment decisions	107	4.01	0.783	104	4.1	0.842	100	4	0.816	0.439	0.645

N = Number of Respondents, S.D. = Standard Deviation
Source: Survey

Private Sector Banks

Poor e-banking investment decisions (Mean= 4.10, S.D. = 0.842) is found as the most important factor leading to the strategic risk by 53 respondents (51.0 per cent), whereas poor e-banking planning (Mean= 4.08, S.D. = 0.797) is viewed as the next important factor as per the opinion of 61 respondents (58.7 per cent).

Foreign Banks

Poor e-banking planning (Mean= 4.08, S.D. = 0.929) is found as the most important factor leading to the strategic risk by 45 respondents (45.0 per cent), whereas poor e-banking investment decisions (Mean= 4.00, S.D. = 0.816) is viewed as the next important factor by 60 respondents (60.0 per cent).

The results of ANOVA in Table 1 (b) show that there is no significant difference among the bankers' viewpoint towards the various factors leading to the strategic risk at 5 percent level of significance. Therefore, the null hypothesis (H_{01})is accepted.

(B) Potential Impacts of Strategic Risk

The potential impacts of strategic risk on the functioning of the selected public, private and foreign banks are shown in Table 2 (a) and 2 (b).

Public Sector Banks

Adverse effect on profitability (Mean= 4.19, S.D. = 0.943) is viewed by 51 respondents (47.7 per cent) as the most potential impact on these banks. Increase in cost (Mean = 3.96, S.D. = 0.800) is considered as the next potential impact by 67 respondents (62.6 per cent), whereas complexity in operations (Mean= 3.89, S.D. = 0.781) is considered as the next potential impact by 66 respondents (61.7 per cent).

Private Sector Banks

Adverse effect on profitability (Mean= 4.12, S.D. = 1.046) is found by 47 respondents (45.2 per cent) as the most potential impact on these banks, whereas increase in cost (Mean= 3.92, S.D. = 0.733) is considered as the next potential impact by 62 respondents (59.6 per cent). On the other

hand, complexity in operations (Mean= 3.90, S.D. = 0.876) is viewed as the next potential impact as per the opinion of 57 respondents (54.8 per cent).

Table 2 (a): Potential Impacts of Strategic Risk on Banks

Statements	N/P	Public Sector Banks					Private Sector Banks					Foreign Banks				
		SD	D	I	A	SA	SD	D	I	A	SA	SD	D	I	A	SA
Increase in cost	N	2	4	12	67	22	1	2	20	62	19	5	7	20	51	17
	P	1.9	3.7	11.2	62.6	20.6	1.0	1.9	19.2	59.6	18.3	5.0	7.0	20.0	51.0	17.0
Complexity in operations	N	2	3	18	66	18	3	3	18	57	23	3	4	15	61	17
	P	1.9	2.8	16.8	61.7	16.8	2.9	2.9	17.3	54.8	22.1	3.0	4.0	15.0	61.0	17.0
Adverse effect on profitability	N	1	5	18	32	51	4	4	15	34	47	5	6	30	40	19
	P	.9	4.7	16.8	29.9	47.7	3.8	3.8	14.4	32.7	45.2	5.0	6.0	30.0	40.0	19.0

Note: N = Number of Respondents, P = Percent
Source: Survey

Table 2 (b): Potential Impacts of Strategic Risk on Banks

Statements	Public Sector Banks			Private Sector Banks			Foreign Banks			ANOVA	
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	F (df=2,308)	Sig.
Increase in cost	107	3.96	0.8	104	3.92	0.733	100	3.68	1.004	3.301	0.038*
Complexity in operations	107	3.89	0.781	104	3.90	0.876	100	3.85	0.857	0.111	0.895
Adverse effect on profitability	107	4.19	0.943	104	4.12	1.046	100	3.62	1.023	9.647	0.000*

Note: N = Number of Respondents, S.D. = Standard Deviation, ***=** Significant at 0.05 level of significance
Source: Survey

Foreign Banks

Complexity in operations (Mean= 3.85, S.D. = 0.857) is found as the most potential impact by 61 respondents (61.0 per cent) on these banks. Increase in cost (Mean = 3.68, S.D. = 1.004) is viewed as the next potential impact as per the opinion of 51 respondents (51.0 per cent), whereas

adverse effect on profitability (Mean= 3.62, S.D. = 1.023) is considered as the least potential impact by 40 respondents (40.0 per cent).

The results of ANOVA in Table 2 (b) show that there is a significant difference among the bankers' viewpoint towards increase in cost (p=0.038, df=2, 308) and adverse effect on profitability (p=0.00, df=2, 308) at 5 percent level of significance. Therefore, the null hypothesis (H_{02})is rejected.

(C) Risk Management Measures to Overcome Strategic Risk

The risk management measures initiated by the banks to overcome the strategic risk in the selected public, private and foreign banks are shown in Table 3 (a) and 3 (b).

Public Sector Banks

Adequacy of management information system (Mean= 4.51, S.D. = 0.705) is viewed by 67 respondents (62.6 per cent) as the most adopting risk management measure in these banks, whereas adequacy of design, delivery and pricing of services (Mean= 4.36, S.D. = 0.756) is found as the next adopting risk management measure as per the opinion of 55 respondents (51.4 per cent). On the other hand, adequacy of technical, operational or marketing support for e-banking product and services (Mean= 4.02, S.D. = 0.858) and clearly defined e-banking objectives to evaluate the success of e-banking activities (Mean= 4.00, S.D. = 0.813) are considered as the next two adopting risk management measures by 52 respondents (48.6 per cent). However, rotation of loan agreement and other electronic contract (Mean= 3.95, S.D. = 0.905) is found as the least adopting risk management measure as viewed by 50 respondents (46.7 per cent).

Table 3 (a): Risk Management Measures to Overcome the Strategic Risk

Statements	N/P	Public Sector Banks					Private Sector Banks					Foreign Banks				
		SD	D	I	A	SA	SD	D	I	A	SA	SD	D	I	A	SA
Adequacy of Management Information System	N	0	1	10	29	67	0	1	10	16	77	1	5	9	54	31
	P	0	.9	9.3	27.1	62.6	0	1.0	9.6	15.4	74.0	1.0	5.0	9.0	54.0	31.0
Adequacy of design, delivery and pricing of services	N	0	1	15	36	55	0	3	7	32	62	1	9	8	55	27
	P	0	.9	14.0	33.6	51.4	0	2.9	6.7	30.8	59.6	1.0	9.0	8.0	55.0	27.0

Rotation of loan agreement and other electronic contract	N	0	10	16	50	31	0	11	16	43	34	3	6	17	47	27
	P	0	9.3	15.0	46.7	29.0	0	10.6	15.4	41.3	32.7	3.0	6.0	17.0	47.0	27.0
Adequacy of technical, operational, marketing support for e-banking products and services	N	1	5	17	52	32	0	1	14	53	36	2	5	17	48	28
	P	.9	4.7	15.9	48.6	29.9	0	1.0	13.5	51.0	34.6	2.0	5.0	17.0	48.0	28.0
Clearly defined e-banking objectives to evaluate the success of e-banking activities	N	0	5	20	52	30	0	2	15	53	34	1	6	16	50	27
	P	0	4.7	18.7	48.6	28.0	0	1.9	14.4	51.0	32.7	1.0	6.0	16.0	50.0	27.0

Note: N = Number of Respondents, P = Percent
Source: Survey

Private Sector Banks

Adequacy of management information system (Mean= 4.63, S.D. = 0.699) is viewed by 77 respondents (74.0 per cent) as the most adopting risk management measure in these banks, whereas adequacy of design, delivery and pricing of services (Mean= 4.47, S.D. = 0.750) is found as the next risk management measure by 62 respondents (59.6 per cent). On the other hand, adequacy of technical, operational or marketing support for e-banking products and services (Mean= 4.19, S.D. = 0.698) and clearly defined e-banking objectives to evaluate the success of e-banking activities (Mean= 4.14, S.D. = 0.730) are considered by 53 respondents (51.0 per cent) as the next two adopting risk management measures. However, rotation of loan agreement and other electronic contract (Mean= 3.96, S.D. = 0.955) is found as the least adopting risk management measure by 43 respondents (41.3 per cent).

Table 3 (b): Risk Management Measures to Overcome the Strategic Risk

Statements	Public Sector Banks			Private Sector Banks			Foreign Banks			ANOVA	
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	F (df=2,308)	Sig.
Adequacy of Management Information System	107	4.51	0.705	104	4.63	0.699	100	4.09	0.83	14.563	.000*
Adequacy of design, delivery and pricing of services	107	4.36	0.756	104	4.47	0.75	100	3.98	0.899	10.395	.000*
Rotation of loan agreement and other electronic contract	107	3.95	0.905	104	3.96	0.955	100	3.89	0.973	.175	.840

Adequacy of technical, operational, marketing support for e-banking products and services	107	4.02	0.858	104	4.19	0.698	100	3.95	0.914	2.340	.098
Clearly defined e-banking objectives to evaluate the success of e-banking activities	107	4.00	0.813	104	4.14	0.73	100	3.96	0.875	1.484	.228

Note: N = Number of Respondents, S.D. = Standard Deviation, ***=** Significant at 0.05 level of significance
Source: Survey

Foreign Banks

Adequacy of management information system (Mean = 4.09, S.D. = 0.830) is found by 54 respondents (54.0 per cent) as the most adopting risk management measure in these banks, whereas adequacy of design, delivery and pricing of services (Mean = 3.98, S.D. = 0.899) is considered as the next adopting risk management measure by 55 respondents (55.0 per cent). On the other hand, clearly defined e-banking objectives to evaluate the success of e-banking activities (Mean = 3.96, S.D. = .875) and adequacy of technical, operational or marketing support for e-banking product and services (Mean = 3.95, S.D. = 0.914) are found as the next two adopting risk management measures as per the opinion of 50 respondents (50.0 per cent) and 48 respondents (48.0 per cent) respectively. However, rotation of loan agreement and other electronic contract (Mean = 3.89, S.D. = 0.973) is considered as the least adopting risk management measure by 47 respondents (47.0 per cent).

The results of ANOVA in Table 3 (b) show that there is a significant difference among the bankers' viewpoint towards adequacy of management information system (p=0.00, df=2, 308) and adequacy of design, delivery and pricing of services (p=0.00, df=2, 308) at 0.05 level of significance. Therefore, the null hypothesis (H_{03}) is rejected.

CONCLUSION AND POLICY IMPLICATIONS

To sum up, poor e-banking planning is found as the most important factor leading to the strategic risk in selected public and foreign banks, whereas poor e-banking investment decisions is considered as an most important factor leading to the strategic risk in private sector banks. Further, adverse effect on profitability is viewed as the most potential impact on the functioning of public and private sector banks, whereas complexity in operations is considered as the most

potential impact on the functioning of foreign banks. However, adequacy of management information system is viewed as the most adopting risk management measure in public, private and foreign banks followed by adequacy of design, delivery and pricing of services.

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