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Risk Perception towards Internet Banking: A Study of Bank Employees of Punjab

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Abstract

Banking system plays a significant role in the growth of economy. The economic strength of any country depends upon the efficiency of its financial system and banks are one of the oldest financial intermediaries in financial system. The development of Information Technology (IT) has influenced all aspects of banking activities during past two decades. All financial transactions these days are dominated by Internet banking technologies, which has ultimately brought a considerable decrease in paper-based banking. As internet banking has become an inevitable part of the banking system, this paper is an attempt to understand the perception of bank employees regarding risk involved in internet banking. The results of the study suggest that majority of employees perceive that the level of risk associated with internet banking services is low and further this concludes that there is very weak association between demographic characteristics of bank employees and risk perception.

Keywords
Internet Banking Services, Risk Perception, Information Technology, Public Sector Banks, Private Sector Banks

Introduction

Banking system plays a pivotal role in the growth of economy. Banking system reflects the health of the economy of the country. Further economic strength depends upon the efficiency of the financial system and the banks are the biggest financial intermediaries in the financial system. Banking sector basically performs the three functions for sound and healthy economic system of the country such as efficient operation of payment system, mobilization of deposits and allocation of deposits to investment products. Banking was the first major service industry which implemented information technology extensively some four decades ago and today it can be considered a sector with the outstanding experience in the field of Information Technology (IT) and automation (de Wit, 1990; Bauser and Colgan, 2001). Since early 90s, each Indian bank is constantly upgrading its IT systems. The first and foremost reason for this

is the severe competition in banking industry. IT gives an alternative channel to banks through which the customers can make transactions anytime - anywhere via internet easily and thus reduce the needs for financial mediators (Liao and Cheung, 2003). The developments in IT have influenced all aspects of banking sector. IT provides new prospects for banks and enables them to move from local level to global frontiers (Mavri and Ioannou, 2006). Further these developments are substituting the computers for paper and labour-intensive techniques and also have made easier the customer's deposits, withdrawals and many internal processes. While looking at the required architecture/infrastructure for the IT, consideration should be given to realities like management of data handling, customer services, support for new product development etc.

Internet Banking: The Concept

Amongst the various electronic banking technologies, internet banking is considered to grow most rapidly in the future. Karjaluoto et al. (2002) suggest that the main electronic delivery channel in banking is the internet accessed through personal computer. The study further suggests that in the future, all financial transactions shall be controlled by internet banking technologies, which ultimately will lead to reduction in paper-based banking (Daniel, 1999). Understanding the nature of innovation is a fundamental step in managing the changes associated with any innovation (Afuah, 2003). Internet banking is the latest wave sweeping the banking services in the recent times. Internet banking involves the inter-connection of communication networks which enables the customers to perform almost all the banking activities over internet. In other words, internet banking means the placement of banking products and services over electronic and communication networks, directly to the customers. Internet banking includes the transactions such as payments, account transfer, investment, Dr card services, Cr card services, insurances etc. It is a system of accessing accounts and general information about different bank products and services through a computer while sitting anywhere. Internet banking enables customers to do banking outside the regular banking hours provided the internet access is available.

In the present era, internet banking is the key channel for e-banking. Internet banking offers several benefits to both banks and their customers. The main benefits which the banks enjoy are cost savings, increasing efficiency, attracting new customers, enhancing reputation, ensuring satisfied and retained existing customers, increasing sales and market share, increasing profit margins and developing better customer relationship (Jayawardhena and Foley, 2000; Jeevan, 2000; Downes and Mui, 1998; Wylie, 1999; Quelch and Klein, 1996; Prescott and Slyke, 1997; Peterson et al., 1997; Furash, 1999; Mols, 1999; IAMAI, 2006 etc).

With the arrival of internet, banking is no longer bound to specific time or geographical area. Now banks do not need to have bricks and mortar networks, they can use direct channels, such as internet to reach their target customers (Lange and Blandin, 2002)

Amongst all E-Banking facilities, internet banking remains the biggest hit amongst customers, due to its speed, convenience and round the clock access which helps the conduct of various banking activities like paying bills, accessing account statement, transferring funds etc. (Haque et al 2009). That is why today, internet banking has become the most successful strategic weapon available to banks to remain profitable in volatile and competitive market conditions. Different banks have different types of services to offer starting from level-1 where only information is dispersed through internet to level-3 where online transactions can be done. This paper focuses on understanding the perception of employees of banks towards risk involved in internet banking.

Review of Literature

Jeevan (2000) observed that the internet banking enabled banks offer low cost and high value-added financial services. Whereas Jayawardhena and Foley (2000) contended that e-banking is providing numerous good opportunities to banking and non-banking financial institutions to add low-cost distribution channel to their existent distribution channels in order to serve their customers better. Nath et al. (2001) indicated that bankers see internet banking as a strategic opportunity which can reduce transactional costs, improve customer service, increase the customer base and expand cross-selling opportunities. Hasan et al. (2002) stated that in respect of almost all performance parameters, the internet group outperformed the non-internet group. Further Liao & Cheung (2003) suggested that the internet helps in saving costs, generation of additional revenue, extension of marketing and building, maintaining and developing long-term customer relations. Khalfan et al., (2006) stated that online banking assists banks to maintain and increase the loyalty of their existing customers, enhance satisfaction of the customers, provides opportunities to banks and enables them to broaden their market share, reduce organizational and operational cost and to improve competitive positions of banks against their business rivals. Malhotra and Singh (2007) also suggested that the adoption of internet banking by other banks increases the probability that a decision to adopt would be made. Xue et al (2011) asserted that there are large numbers of benefits of using internet banking both to banks and to their customers. Bhalla et al (2015) found that bankers consider the adoption of e-banking as vital in today's complex business environment and banks offer exciting services to their customers so as to encourage them to avail the benefit of click and

mortal banking. Naidu and Paramasivan (2015) too indicated that bankers are satisfied regarding the access rate and retention rate of e-banking customers and they are also satisfied with switching-over rate of customers from traditional banking system to internet-based banking. However, Oladejo and Akanbi (2012) indicated that bankers believe that electronic banking increases the probabilities of government and other stakeholders' access to the public data, which results in upsurge in the chances of fraud and lack of information security. The review of literature provided that internet banking services may have a negative impact on the profitability of banks in the short but in the long run these services have a positive impact on the profitability of banks. Further many studies have been done to understand the perception of the customers towards level of satisfaction and specially risk involved while using internet banking services. However, very limited literature is available exploring the perception of bank employees particularly towards risk involved in internet banking services. Therefore, a study with following objectives would be helpful in bridging the gap in existing literature.

Objectives of the study

1. To analyze the risk perceived by public and Indian private sector bank employees with regard to Internet banking services.
2. To study the association between risk perceived vis-a-vis selected demographics of bank employees.

Research Methodology

All the public and Indian private sector banks functioning in the country constituted the universe for this study. A sample of 20 banks considering 10 each from public sector and Indian private sector was selected on the basis of highest deposits as on March 31, 2016. Data required for the study was collected from bank employees through self-designed structured questionnaire. Tool for collecting the data was designed after extensive review of literature and preliminary interviews with officials of few banks. Pilot survey was conducted on small number of 40 respondents first and then required changes were incorporated before administering the final questionnaire. Responses were collected from 200 bank employees posted in branches of selected banks across major cities of Punjab. In order to verify the internal consistency of the data, Cronbach's Alpha was used. It is most commonly used method to determine the internal consistency and reliability of data collected through questionnaire having Likert type scale. As per the rule of thumb, 0.60 is the lowest acceptable value of Cronbach's alpha whereas 0.70 or any higher value is considered to be very good representative of reliability of the data. With regard to data collected for this study, value of Cronbach's alpha

was found to be 0.73 which signifies sufficient reliability of the data. Overall score of risk was calculated using all Likert type statements in the questionnaire. Score of risk thus arrived was converted in three relevant levels of risk using Cube root method for requisite analysis. Difference in the risk perceived by employees from public sector and private sector was analyzed using independent sample t-test. Single sample t-test is also used to compare the risk perceived by employees of particular bank with their respective sector of ownership. Chi-square test of independence was used to investigate the association between levels of risk perceived with different demographic variables such as age, education level and experience of bank employees. Further the strength of association was analyzed using value of Phi and Cramer's V.

Data and Interpretation

This section deals with the statistical findings derived from the primary data collected to examine the perception of bank employees towards risk involved in internet banking services.

Table 1: Demographic profile of the Employees (N = 200)

Characteristics	Level		Frequency	Percentage
Age Group	20-30 years		116	58.0
	30-40 years		60	30.0
	40-50 years		18	9.0
	50 years & above		6	3.0
Sex	Male		132	66
	Female		68	34
Marital Status	Married		117	58.5
	Unmarried		83	41.5
Monthly Income	Less than Rs. 25000		54	27.0
	Rs. 25000 – Rs. 50000		94	47.0
	Rs. 50000 – Rs. 75000		36	18.0
	Above Rs. 75000		16	8.0
Educational Qualification	Under Graduate		114	57.0
	Post Graduate		61	30.5
	Diploma		6	3.0
	Professional		19	9.5
Years of experience	Less than 5 years		110	55.0
	6 – 10 years		64	32.0
	11 – years		8	4.0
	Above 15 years		18	9.0

(Source: Results of primary survey)

A majority of bank employees (58%) are from the younger age group of 20–30 years, followed by 30% in the 30–40 years category, 9% in 40–50 years, and 3% above 50 years. Male employees form a larger share (66%) compared to females (34%). More respondents are married (117) than unmarried (83). In terms of income, most employees (47%) earn between

₹25,000–50,000 monthly, 27% earn less than ₹25,000, 18% fall in the ₹50,000–75,000 range, and 8% earn above ₹75,000. Regarding education, 57% are graduates, 30.5% postgraduates, 9.5% hold professional qualifications, and 3% possess diplomas. Work experience also varies: 55% have less than 5 years, 32% between 6–10 years, 4% between 11–15 years, and 9% over 15 years. The demographic profile covering age, gender, marital status, income, education, and experience shapes employees' skills in evaluating internet banking services. Younger respondents, being more exposed to technology, form the majority, highlighting greater awareness and usage of online banking.

Table 2: Mean & Standard Deviation of Risk Perceived by Sample Bank Employees with regard to Internet Banking Services (N = 200)

Variable	Mean	Std. Deviation
Risk perceived by all employees towards Internet Banking Services	1.366	0.0254
Risk perceived by all employees of public sector banks towards Internet Banking Services	1.498	0.3416
Risk perceived by all employees of private sector banks towards Internet Banking Services	1.233	0.3275

(Source: Results of primary survey)

The perception of bank employees with respect to level of risk perceived associated with internet banking was gathered and the results are compiled in Table 2. The results show that the mean score of risk level worked out to be the highest i.e. 1.498 in the case of public sector banks, while the respective figure turned out to be 1.233 in case of private sector banks, respectively. The public and private sector banks together i.e. the figure with respect to mean score of risk level on an overall basis worked out to be 1.366. Based on the perception of the bank employees, it may be concluded that the level of risk associated with internet banking services was very low in both the banks.

Table 3: Classification of Sample Bank Employees according to Levels of Risk perceived with regard to Internet Banking Services

Risk level	Score	No	Percent
Low	01-73	73	36.50
Medium	74-146	66	33.00
High	147-220	61	30.50
Total		**200**	**100.00**

(Source: Results of primary survey)

Table 3 shows that 73 i.e. 36.50% respondents have perceived that there is low risk involved in internet banking, 66 respondents have opinion that there is medium level of risk in internet

banking and 61 respondents (30.50%) have perception that there is high risk involved in internet banking.

Table 4: Independent Sample t-test showing difference in Risk perceived by Employees of Public and Private Sector Banks with regard to Internet Banking Services

(N_1 = 100, N_2 = 100)

	Public Sector Banks (Mean ± S.D)	Private Sector Banks (Mean ± S.D)	Mean Diff.	t-value	p-value
Risk perceived with regard to Internet Banking Services	1.498 ± 0.3416	1.233 ± 0.3275	0.265	5.608	0.000**

(Source: Results of primary survey)
*** significant at 1% level of significance*

The present study has attempted to compare the perception of bank employees with respect to level of risk associated with internet banking in public and private sector banks. It is hypothesized that there is no difference in the level of risk associated with internet banking services for public and private banks. Table 4 indicated that the mean score with respect to level of risk calculated to be 1.498 in case of public sector banks, while the corresponding figure was 1.233 in case of private sector banks, respectively. The value of mean difference among public and private sector banks estimated to be 0.265. The results of independent t-test clearly indicated that mean difference of risk level between public and private sector banks differ significantly from each other.

Table 5: One Sample t-test comparing Bank-wise Score of Risk perceived by Employees of Public Sector Banks (N = 10 for each Bank; Test Value = 1.498)

Public Sector Banks	Mean ± S. D	Mean Diff.	t-value	p-value
Bank of Baroda	1.577 ± 0.3444	0.078	0.720	0.490
Bank of India	1.408 ± 0.2923	- 0.091	0.981	0.352
Canara Bank	1.769 ± 0.2321	0.271	3.690	0.005**
Central Bank of India	1.538 ± 0.3477	0.040	0.366	0.723
Corporation Bank	1.754 ± 0.1529	0.255	5.279	0.001**
IDBI	1.308 ± 0.3342	- 0.191	1.805	0.104
Punjab National Bank	1.308 ± 0.2854	- 0.191	2.114	0.064
State Bank of India	1.039 ± 0.1218	- 0.460	11.945	0.000**
Syndicate Bank	1.546 ± 0.2389	0.048	0.631	0.543
Union Bank of India	1.738 ± 0.2490	0.240	3.048	0.014*

(Source: Results of primary survey)
** and ** significant at 5% and 1% level of significance respectively*

It is further hypothesized that the perceptions of bank employees with respect to level of risk associated with internet banking service may vary within the ownership sector as well. In this regard, one sample t-test was applied to compare the mean score of risk of individual banks within the group of ownership structure. Table 5 presents the results of one sample t-test which compares the risk of individual banks with average risk perceived by employees of public sector banks. Risk perceived came out to be the highest in Canara Bank (1.769), followed by Corporation Bank (1.754), Union Bank of India (1.738), Bank of Baroda (1.577), Syndicate Bank (1.546), Bank of India (1.408), Punjab National Bank (1.308), IDBI (1.308) and the lowest in State Bank of India (1.039). It was noticed that the mean score with respect to risk level reported to be higher than test value (1.498) in case of five banks namely Canara Bank (1.769), Corporation Bank (1.754), Union Bank of India (1.738), Bank of Baroda (1.577) and Syndicate Bank (1.546), respectively. This implies that the degree of risk was observed to be higher among these five banks as presumed by the bank employees. Out of all public sector banks, the mean score with respect to risk level differ significantly among bank employees in three banks namely Corporation Bank, State Bank of India and Union Bank of India, while it was statistically non-significant in all other banks. The deviation from mean score was the highest in Central Bank of India (0.3477) and least in State Bank of India (0.1218), while it varied between 0.2321-0.3444 in all other banks. As perceived by the sample bank employees, the level of risk was the highest in Canara Bank. Four other banks namely Corporation Bank, Union Bank of India, Bank of Baroda and Syndicate Bank were also recognized as having high level of risk associated with internet banking services as the mean score on account of risk level among bank employees of respective banks came out to be higher than test value.

Table 6: One Sample t-test comparing Bank-wise Score of Risk perceived by employees of Private Sector Banks (N = 10 for each Bank; Test Value = 1.233)

Private Sector Banks	Mean ± S. D	Mean Diff.	t-value	p-value
Axis Bank	1.039 ± 0.1218	- 0.195	5.052	0.001**
Federal Bank	1.062 ± 0.1945	- 0.172	2.789	0.021*
HDFC Bank	1.031 ± 0.0974	- 0.202	6.565	0.000**
ICICI Bank	1.245 ± 0.2679	0.012	0.142	0.890
IndusInd Bank	1.069 ± 0.2189	- 0.164	2.367	0.042*
J & K Bank	1.315 ± 0.3231	0.082	0.806	0.441
Karnataka Bank	1.677 ± 0.3712	0.444	3.781	0.004**
Kotak Bank	1.300 ± 0.2700	0.067	0.786	0.452
South Indian Bank	1.692 ± 0.1540	0.459	9.425	0.000**
Yes Bank	1.146 ± 0.2159	- 0.087	1.271	0.235

(Source: Results of primary survey)
** and ** significant at 5% and 1% level of significance respectively*

Similarly, individual score of risk perceived by private sector banks was compared to average score of all private sector banks. Table 6 revealed that mean score with respect to level of risk came out to be the highest in South Indian Bank (1.692), followed by Karnataka Bank (1.677), J & K Bank (1.315), Kotak Bank (1.300), ICICI Bank (1.245), while it was lower than test value i.e. 1.233 in all other banks. It was noticed that HDFC bank emerged as the safe bank in terms of risk as the value of risk level was the lowest i.e. only 1.031 than that of all other banks, respectively. The deviation from mean score was the highest in Karnataka Bank (0.3712) and least in HDFC Bank (0.0974), while it varied between 0.1218-0.3231 in all other banks. As perceived by the sample bank employees, the level of risk associated with internet banking services was low in all banks. However, the level of risk was found to be higher than test value in case of five banks namely South Indian Bank, Karnataka Bank, J & K Bank, Kotak Bank and ICICI Bank, respectively.

In order to explore the association between the levels of risk perceived by bank employees with their respective selected demographic characteristics, chi-square test of independence has been used. Only three characteristics i.e. age, educational qualifications and experience have been used for the analysis.

Table 7: Chi-square test of Independence showing Association between Age of Bank Employees with Levels of Risk Perceived with regard to Internet Banking Services

(N = 200)

		Levels of Perceived Risk			
Age group of Bank Employees	**Count**	**Low**	**Moderate**	**High**	**Total**
20 – 30 years	Observed Count	49	38	29	**116**
	Expected Count	42.3	38.3	35.4	**116**
30 – 40 years	Observed Count	20	18	22	**60**
	Expected Count	21.9	19.8	18.3	**60**
40 – 50 years	Observed Count	4	8	6	**18**
	Expected Count	6.6	5.9	5.5	**18**
Above 50 years	Observed Count	0	2	4	**6**
	Expected Count	2.2	2.0	1.8	**6**
Total	Observed Count	73	66	61	**200**
	Expected Count	73.0	66.0	61.0	**200**
Pearson Chi-square					**9.807**
p-value					**0.133**
Phi					**0.221**
Cramer's V					**0.157**

(Source: Results of primary survey)

Here in the table 7, p-value is 0.133 that is greater than the alpha value i.e. 0.05 which means our null hypothesis doesn't get rejected. This means that association between age and level of risk perceived by bank employees is found to be insignificant. As per the data analyzed in the above table Phi Value is 0.221 which depicts that there is little or weak and insignificant correlation between perceived risk and demographic profiles of the bank employees. In order to provide a measure of the strength of the relationship between two variables from a contingency table, Cramer's V can be used. Calculation of this test in large part derives from chi-square, provides results which vary between 0 and +1. The coefficient as shown in the table is 0.157, suggesting a weak relationship.

Table 8: Chi-square test of Independence showing Association between Educational Qualification of Bank Employees with Levels of Risk Perceived with regard to Internet Banking Services (N = 200)

		Levels of Perceived Risk			
Educational Qualifications of Bank Employees	**Count**	**Low**	**Moderate**	**High**	**Total**
Graduate	Observed Count	47	39	28	**114**
	Expected Count	41.6	37.6	34.8	**114.0**
Post Graduate	Observed Count	17	21	23	**61**
	Expected Count	22.3	20.1	18.6	**61.0**
Diploma	Observed Count	1	2	3	**6**
	Expected Count	2.2	2.0	1.8	**6.0**
Professional	Observed Count	8	4	7	**19**
	Expected Count	6.9	6.3	5.8	**19.0**
Total	Observed Count	73	66	61	**200**
	Expected Count	73.0	66.0	61.0	**200.0**
Pearson Chi-square					**7.019**
p-value					**0.319**
Phi					**0.187**
Cramer's V					**0.132**

(Source: Results of primary survey)

Table 8 shows that, p-value is 0.319 that is greater than our alpha value i.e. 0.05. It means the null hypothesis doesn't get rejected. Hence there is no significant association between educational qualification of bank employees and the risk perception of bank employees. Further Phi Value i.e. 0.187 also depicts that there is no association between these two variables. Also, the value of coefficient of Cramer's rule as shown in the table is 0.132, which suggests that there is very weak and not acceptable association between educational qualification of bank employees and risk perception of the employees.

Table 9: Chi-square test of Independence showing Association between Experience of Bank Employees with Levels of Risk Perceived with regard to Internet Banking Services

(N = 200)

		Levels of Perceived Risk			
Years of Experience of Bank Employees	**Count**	**Low**	**Moderate**	**High**	**Total**
Less than 5 years	Observed Count	49	36	25	**110**
	Expected Count	40.2	36.3	33.6	**110.0**
6 to 10 years	Observed Count	20	22	22	**64**
	Expected Count	23.4	21.1	19.5	**64.0**
11 to 15 years	Observed Count	3	1	4	**8**
	Expected Count	2.9	2.6	2.4	**8.0**
More than 15 years	Observed Count	1	7	10	**18**
	Expected Count	6.6	5.9	5.5	**18.0**
Total	Observed Count	73	66	61	**200**
	Expected Count	73.0	66.0	61.0	**200.0**
Pearson Chi-square					**15.602**
p-value					**0.016***
Phi					**0.279**
Cramer's V					**0.197**

(Source: Results of primary survey)
** Significant at 5% level of significance*

P-value as shown in table no. 9 is 0.016 which is less than the alpha value i.e. 0.05. It means that null hypothesis gets rejected and hence there is a significant association found between number of years of experience of bank employees and the risk perception of bank employees. The level of risk is found to be increasing with experience. In other words, it can be said that employees with more experience tend to have high risk perception towards internet banking services. Further Phi Value i.e. 0.279 shows that these two variables are moderately associated. However, the value of coefficient of Cramer's rule is 0.197, which suggests that there is weak association between number of years of experience of bank employees and risk perception of the employees.

Conclusion

It is evident from the present research that the risk perception of bank employees towards the internet banking services is found to be overall low in both public and private banks. However, on comparison of risk perceived by employees of public sector with that of private sector banks, it is clear that risk perception of employees belonging to public sector banks is found to be high. Therefore, to strengthen employees' perception towards internet services, the banks should undertake more training programs so as to enhance their outlook towards new and existing internet banking products. These programs will help build confidence amongst employees to market internet services products to its customers. Moreover, within the public sector banks, employees belonging to Canara Bank, Corporation Bank and Union Bank of India are found to have high risk perception in comparison to average risk perception of public sector banks whereas employees from SBI are found to be having low level of risk perception. In case of private sector banks, employees from Karnataka Bank and South Indian Bank are found to be having high risk perception in comparison to average risk perception of the group. On the other hand, employees from Axis Bank, Federal Bank and Induslnd Bank are having low score of risk perception in comparison to group average. Study established an insignificant association between the risk perception and the demographic characteristics such as age and educational qualification of the bank employees. However, the association between experience of bank employees and risk perception is found significant but weak which implies that employees with more experience are having high level of risk perceived. This finding once again reflects the need for more awareness and training programmes amongst employees of public and private sector banks.

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