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The Evolving Dynamics of Digital Banking: An Indian Perspective

Shubhra Bhatia¹, Neelakshi Arora ²and Santosh Gupta ³

Abstract

Purpose: The present research aims to explore the rapidly changing perception of the customers towards digital banking services provided by Indian banks. The constructs observed under the scope of this study were the awareness and behavioural aspects, perceived risk, usefulness, accessibility, trust and cost and time saving factor. The study attempts to evaluate how the satisfaction of customers with regards to digital banking services is affected by each of these constructs. Design / Methodology/ Approach: In order to prepare a methodical approach to the research, detailed opinion about the satisfaction of the digital banking customers was collected through a self-prepared and self-administered structured questionnaire. The relationship between the constructs was attempted to be studied through a descriptive research design. Snowball sampling was adopted while collecting data through google form. G*power suggested the sample size to be 89. Structural equation model was assessed using Smart PLS software. Findings: The result of the study clearly indicates that the perception and acceptability of the customers for E-banking services in India varies with different age groups and occupation groups. The results also reveal that the perceived risk has a direct & significant impact on the satisfaction of customers while availing E banking services as compared to the other factors like perceived accessibility, trust, usefulness, ease of use and cost & time saving which have negligible or no impact on the satisfaction level of customers. Originality Value: It was observed that there has been a lot of research work on the importance of technology adoption and the factors that influence technology adoption, what they want from Indian banks and what factors are actually bothering them for absolute adoption of E-banking services. This research paper tries to fill that void in the literature.

Keywords: E-banking, information technology, internet banking, Customer's Satisfaction, India

1. Introduction

E-banking has become a worldwide phenomenon, one of the most revolutionised components of today's economic growth in the age of information technology. It is a priceless and influential tool for heavy development, growth, innovation, and increased

competitiveness. With the widespread use of the internet and computers, e-banking has become an excellent way for banks to satisfy their customers' expectations. Banks are putting in a lot of effort these days to attract clients and keep their market share by offering a variety of innovative services through e-banking. Due to its clear benefits to the people and businesses, e-banking is gaining prominence on the global banking map day by day.

Electronic banking is a multi-channel distribution system which encompasses more than just online banking and can be defined in a variety of ways. In its most basic form, it can refer to a bank's delivery of information or services to its customers via computer, television, telephone, or mobile phone. Customers can conduct financial transactions via Online Banking, Internet Banking, or E-banking through a secure website operated by the banks or financial institution, which can be a retail bank, virtual bank, or a cooperative like credit union. Some of the most popular E-banking services include Credit Cards Debit Cards Automated Teller Machines (ATM), Smart Cards are electronic cards that are used to store information, Mobile Banking, Internet Banking, Telephone Banking, and Electronic Clearing Services are all examples of mechanism of electronic funds transfer (EFT). The concept and scope of E-banking is continuously evolving. It provides an efficient payment and accounting system, resulting in a significant increase in the speed with which banking services are delivered.

In India, the Government, and the Reserve Bank of India (RBI) are making continuous efforts to make the online banking journey more and more seamless to the



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customers. However, the banks are still facing some obstacles to adoption of digitalization by the customers like, Security threats, financial illiteracy, lack of awareness among the customers and fear factor. The removal of friction from the client journey is one of the top priorities of digital banks today. Banks are battling an influx of FinTech businesses and start-ups that specialise in fixing common banking difficulties and streamlining the client journey through better mobility. Forward-thinking banks have expanded their in-house capabilities in response to market disruptions. Others have teamed up with FinTech's to create new digital products. And some have just been bought out their competitors. Customers simply straightforward and safe transactional trip, facilitated by technology and a variety of digital channels. Banks are reevaluating how to give more value to their customers with digital innovations in the banking sector, emerging financial models and delivery methods to meet their customer's expectations.

Therefore, with the ever-growing demand for embracing latest technologies, we wonder where the banks in India stand with regards to adoption of technology and if they really meet the expectations of their customers?

The researchers have aimed to explore the perception of customers towards e banking. For the present study, the researchers have considered five independent parameters and analysed each of these parameters with the satisfaction of customers while using online banking services. The aim of the study is to find out whether the perception of the customers is associated with cost, accessibility, trust, risk and usefulness.

2. Review Of Literature

(Harchekar, 2018) In the research paper "Digitalization in Banking Sector" the researcher stated that to improve the customer service and MIS reporting, the need for automation was felt in the Indian banking sector in 1980s. The author also stated that Digitalization is the process of transforming data into a digital format, in which the information is organized into bits. Research paper is based on secondary data. The public sector banks in India account for more than 92 percent of the total banking business in India giving a leading position in the banking sector.

(Surya Prakasha Rao Surya Prakasha Rao, B., Vol, I., Agarwalla, S. K., Barua, S., Jacob, J., Varma, J. R., Jaya Priya, O. M., Corresponding, K., Com, M., Uk, A., Uk, C., Chaudhery, J., Mittal, V., Agarwal, N., Jisha, V. G., Go Mathi 2 Assistant Professor, V., Sah, V. P., Lourrine, A., Nairobi, O, Nayak, R. 2018) In the research paper "A Conceptual Study on Digitalization of Banking - Issues and Challenges in Rural India" The researcher focused that Digitalization of rural banking is very helpful in financial inclusion of rural sector in India and will also help India economy to grow faster which will lead to development of all other sectors. The author stated that Demonetization of 2016 is the best obvious example explaining importance of digitalization in banking sector especially in rural India. The Survey report stated that 29% of rural population lack literacy, making this one of the greatest challenges in implementation of digitalization to rural banking. This conceptual paper concluded that for banking sector it is necessary to take measures like creating awareness among people on importance of digital banking services, increasing financial literacy through various modes of creating awareness among the rural people.

(Kudryavtseva, A. E., & Bondarev 2018) In the research paper "Digitalization of banking in Russia: Overview" the author stated that purpose of this research is to find out what is the current stage of digitalization of Russian banks. The current processes in the Russia were compared to international ones. The research paper concluded that currently it can be said that despite a lot of new initiatives introduced both by businesses and the government in the recent years in Russia, the Russian banking services do not keep up with those provided by global counterparts.

(Litvishko, Beketova, Akimova, Azhmukhamedova, & Islyam, G. 2020) In the research paper Impact of the Digital Economy on the Banking sector. The paper was focused on banking sector in Kazakhstan wherein the author stated that E-payments and e-Commerce are an integral part of the financial sector. The development of the digital banking industry requires the efforts of every commercial Bank, as well as support from the State Bank. commercial banks should also focus on managing communications, social media information, updating information technology platforms, developing network security management schemes, and classifying customers for better management in this digital age.



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(Meena, 2019) In the review research paper "Implications of Digitalization in Banking Sector: A Review of Literature" the author concluded that Banks in various parts of the world are strengthening up their long-haul systems so as to tackle the open doors offered by digitization.

(Sbarcea, 2019) In the research paper "Banks Digitalization - A Challenge for The Romanian Banking Sector" The author concluded that an accelerated dynamics in the use of mobile telephony and the Internet that has facilitated the use of banking services that use them, such as internet banking and mobile banking, the use of mobile phones overcoming the use of computers for access to online banking services. technology and digitization are one of the defining features of the developed banking sectors and one of the biggest challenges in banking for developing economies, as is the case with Romania. Technology and digitization are one of the defining features of the developed banking sectors and one of the biggest challenges in banking for developing economies, as is the case with Romania.

(Shailaja & Ramesh, 2021) In the research paper "A Study on Mobile Banking services in India" the researcher has discussed about Paper discusses about mobile banking applications and basic mobile banking services and their benefits to its customers. Mobile banking alone serves the purpose of different banking transactions in convenience to its customers which in turn saves the time and cost of its customers. Mobile banking is adopting by customers at an increasing pace.

(Haralayya, 2021) In the research paper "How Digital Banking has Brought Innovative Products and Services to India" the paper stated that there are 10 different methods of digital payment available in India namely Banking cards (Debit/credit or prepaid cards), Unstructured Supplementary Service Data (USSD), Aadhaar Enabled Payment System (AEPS), Unified Payments Interface (UPI), Mobile Wallets, Bank Prepaid Cards PoS (Point of Sale), Terminals Internet Banking, Mobile Banking and Micro ATMs. The paper concluded that Digital transformation is an almost top priority for every bank today. Investments in technology and innovation are skyrocketing. With diminishing margins on deposits, rising competition, and an evolving consumer mindset, digitalization is no longer a choice but a necessity for businesses and bank.

(Akilandeswari, 2014) In the research paper "Customer's perception towards online banking services". The researcher has assessed the degree of customer satisfaction of banks provided by the public sector with their online banking services. A scaling technology was employed to analyse the perception of sample customers of dimensions efficiency, satisfaction, trust and responsibility. It is noted that most customers are moderately satisfied with banks' online banking services. In addition to providing a platform for offering added value services to the customer, online banking increases operational efficiencies and reduces costs, thus satisfying all the essential requirements for a flourishing banking industry. Customers have to be educated in the use of every new technology, as they have been used only to the traditional banking system.

(Ganpathi, 2016) In the research paper "Customer Perception towards Internet Banking Services in Sivagangai District, Tamil Nadu". The research was conducted to find out how the customer can use online banking services. The educational level of the respondents influences the use of internet banking facilities and is highly satisfied with the maintenance, updating of transactions, transfer of accounts and easy access to them during use.

The review shows that most customers are moderately satisfied with banks' online banking services. Online banking increases operational efficiencies and reduces costs, satisfying all the requirements for a flourishing banking industry. Customers have to be educated in the use of every new technology, as they have been used only to the traditional banking system.

3. Hypothesis

Keeping the conceptual framework in mind, the following hypothesis were developed

H1 There is no significant relationship between customer satisfaction and perceived accessibility of the online banking services offered by Indian banks.

H2 There is a no significant relationship between customer satisfaction and perceived cost involved in the use of online banking services offered by Indian banks.

H3 There is a no significant relationship between customer satisfaction and perceived risk involved in the use of the online banking services offered by Indian banks.

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H4 There is a no significant relationship between customer satisfaction and perceived usefulness of the online banking services offered by Indian banks.

H5 There is a no significant relationship between customer satisfaction and perceived trust of the customers while using online banking services offered by Indian banks.

4. Conceptual Framework

A concept is a visual or symbolic representation of an idea. Figure 1 clearly depicts the model of the study, which shows the independent and dependent variables as a diagram. Customer satisfaction is a critical component of any business's success and banking business is not an exception to this. As a result, the researchers spend the significant amount of their time looking at aspects that influence customer satisfaction in E banking. Different dimensions of service quality and their influence on customer satisfaction has been considered in this research. The perception of the customers regarding the five independent variables, namely, Perceived Trust, Perceived Risk, Perceived Usefulness, Perceived Accessibility and Perceived Cost and their relationship with Customer satisfaction is explored. Keeping all the constructs in mind, the researchers have devised a five-hypothesis conceptual model.

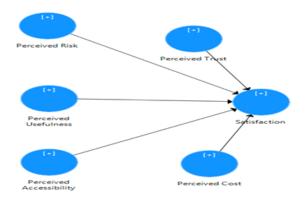


Figure 1: Conceptual framework

5. Research Methodology

For collection of data, structured questionnaire was used. The suitability of the sample size was determined using G* Power software. The software estimates the sample size for the research based on the number of predictors (i.e., independent variables) and the desired effect

size and probability error. With five predictors, the estimated sample size given by the software was 89. Though the sample size of 89 (figure 2 & 3) was considered as adequate but the research was conducted using data of 107 respondents. The 6 constructs which were taken consideration for analysis includes one dependant variable namely Satisfaction of customers in banking sector and five independent variables namely Perceived Accessibility, Perceived Cost, Perceived trust, Perceived usefulness and Perceived Risk. The data was collected using snowball sampling through google form questionnaire. After collection, the data was analysed through Smart PLS SEM. Structural equation model was assessed using Smart PLS software.

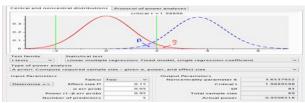


Figure 2: Sample size using G Power software.

Source: Authors own calculation

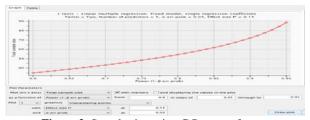


Figure 3: Sample size using G Power software. **Source**: Authors own calculation

6. Discussion and Analysis

The demographic profile based on gender showed that 47.70% were female respondents (51 participants) followed by 52.30% male (56 participants). The demographic profile show that 47.70% (51 Participants) of the total respondents were aged between 18 – 25 years, 39.30% (42 Participants) of the respondents were aged between 26 – 45 years, 13.1% (14 Participants) of the respondents were aged between 46-60 years. The demographic profile further shows that the highest educational level of respondents is Masters' degree (PG) with 57.90% (62 participants) followed by Bachelor's degree (UG) with 38.3% (41 participants) and Senior

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Secondary School Level - 12th Standard with 3.7% (4 participants). Majority of the respondents are earning income between INR 5,00,000-10,00,000 with 35.5% (38 participants) of the respondents, followed by earning group between INR 2,50,001-5,00,000 with 26.2% (28 participants) of the respondents. 14.00% (15 participants) of the respondents earned income INR between 10,00,001-25,00,000 and 5.6% (6 participants) of the respondents earned income between INR 25,00,001-50,00,000 and only 0.9% (1 participant) of the total respondents earned

income above INR 50,00,000. The demographic profile based on occupation showed that out the total respondents 28% (30 participants) were salaried employee of private sector, 26.30% (28 participants) were students, 20.60% (22 participants) were public sector employees, 5.6% (6 participants) were and unemployed and 1.9% (2 participants) were home maker and retired people respectively.

Table1: Summary of demographic profile (using counts, percentage and cumulative %)

Levels	Counts	% Of Total	Cumulative %	
Gender			•	
Female	51	47.7 %	47.7 %	
Male	56	52.3 %	100.0 %	
Age				
18-25	51	47.7 %	47.7 %	
26-45	42	39.3 %	86.9 %	
46-60	14	13.1 %	100.0 %	
Qualification				
Bachelor's degree	41	38.3 %	38.3 %	
Master's / M.Phil / PhD / Professional degree	62	57.9 %	96.3 %	
Senior Secondary School Level - 12th Standard	4	3.7 %	100.0 %	
Occupation				
Home maker	2	1.9 %	1.9 %	
Retired person	2	1.9 %	3.7 %	
Salaried Employee (Government or Public sector)	22	20.6 %	24.3 %	
Salaried Employee (Private sector)	30	28.0 %	52.3 %	
Self-employed / Business owner	17	15.9 %	68.2 %	
Student	28	26.2 %	94.4 %	
Unemployed (looking for a job)	6	5.6 %	100.0 %	
Family income (Yearly, INR)			1	
10,00,001–25,00,000	15	14.0 %	14.0 %	
2,50,001–5,00,000	28	26.2 %	40.2 %	
25,00,001–50,00,000	6	5.6 %	45.8 %	
5,00,001–10,00,000	38	35.5 %	81.3 %	
Above 50,00,000	1	0.9 %	82.2 %	
Below 2,50,000	19	17.8 %	100.0 %	

Source: Authors' own work on Jamovi

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7. Confirmatory Composite Analysis

7.1. Measurement Model

Confirmatory composite analysis was analysed for the reliability of the constructs. For the purpose of study Cronbach's Alpha with a value of 0.7 was taken into consideration. Cronbach's Alpha value for all the 6 constructs (table 2) was above 0.7 thus questionnaire was reliable based on this model. The threshold for Composite reliability and Rho_A is above .70. From table 2 it is evident that questionnaire stands true for these tests also. For

Average Variance Extracted (AVE) the celling limit is 0.50 i.e., above 0.50 is accepted. It's evident from the table 2 that the questionnaire meets the criteria for AVE also. Thus, it can be concluded that data meets all the criteria for reliability. In Smart PLS software factor loading is calculated based on partial least squares which should be more than 0.70. For all the indicators the factor loading is more than 0.70 (figure 4) thus it can be concluded that all the indicators are proper and there was no need to reduce any indicator.

Table 2: factor loadings, Cronbach's Alpha, rho A, Composite Relaibility and AVE

	Factor Loadings	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Perceived Accessibility					
PA1	0.841		0.893		0.757
PA2	0.907	0.892		0.925	
PA3	0.856				
PA4	0.873				
Perceived Cost					
PC1	0.801		0.890	0.912	0.634
PC2	0.781				
PC3	0.780	0.884			
PC4	0.788				
PC5	0.873				
PC6	0.749				
Perceived Risk					
PR1	0.897		0.892	0.914	
PR2	0.883				
PR3	0.751	0.881			0.680
PR4	0.848				
PR5	0.731				
Perceived Trust					
PT1	0.930		0.912	0.938	0.504
PT2	0.904	0.911			0.791
PT3	0.918				

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PT4	0.799				
Perceived Usefulness					
PU1	0.818				
PU2	0.876	0.916	0.920	0.937	0.749
PU3	0.891				
PU4	0.851				
PU5	0.889				
Satisfaction					
SA1	0.934	0.021	0.931	0.956	0.070
SA2	0.934	0.931			0.878
SA3	0.943				

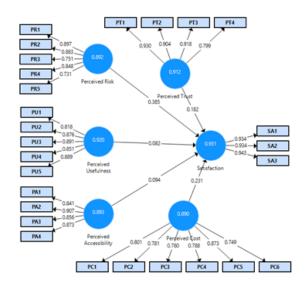


Figure 4: Structural Equation Model **Source:** Authors' own work on Smart PLS

7.2 Discriminant Validity

Discriminant validity was used to further analyse the variables under the study and finding out whether they are truly different to each other or not. Discriminant variables defines whether measurements that are not hypothetical to be interrelated are unrelated. To test discriminant validity Fornell-Larcker Criterion (Fornell, 1981) and HTMT criteria was used. Fornell- Larcker Criterion is a method based on the degree to shared variance.

Table 3 below represents results of Fornell-Larcker criteria which indicate that, discriminating validity of the study is achieved as square root of the average variance is higher than crossed correlation constructs.

The Heterotrait-monotrait ratio is the approach based on the correlations (HTMT) to assess discriminant validity. HTMT is the average between heterotrait-heteromethod correlations and monotrait-heteromethod correlations. Threshold proposed for HTMT by some authors is maximum of .85 (Kline., 2011, Henseler et al., 2015) while by others is maximum of .90 (Teo et al., 2008, Gold et al., 2001). We can see in table 4 that all the values of HTMT are below to .90 thus it can be concluded that construct is having discriminant validity. Thus, further analysis for model fit can be done. Table 5 presents data relating to Model fit summary which indicates that the model is fit as SRMR is 0.073 which is less than maximum of 0.08 and NFI is 0.745 which is though less than 0.90 but can still be considered.

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Table 3: Fornell - Larcker

	Perceived Accessibility	Perceived Cost	Perceived Risk	Perceived Trust	Perceived Usefulness	Satisfaction
Perceived Accessibility	0.870					
Perceived Cost	0.581	0.796				
Perceived Risk	0.735	0.582	0.825			
Perceived Trust	0.814	0.642	0.753	0.889		
Perceived Usefulness	0.790	0.547	0.771	0.782	0.866	
Satisfaction	0.725	0.672	0.789	0.762	0.722	0.937

Source: Authors' own work on Smart PLS

 Table 4: Heterotrait-Monotrait Ratio (HTMT)

	Perceived Accessibility	Perceived Cost	Perceived Risk	Perceived Trust	Perceived Usefulness	Satisfaction
Perceived Accessibility						
Perceived Cost	0.651					
Perceived Risk	0.829	0.657				
Perceived Trust	0.903	0.710	0.840			
Perceived Usefulness	0.869	0.591	0.852	0.850		
Satisfaction	0.795	0.732	0.866	0.828	0.776	

Source: Authors' own work on Smart PLS

Table 5: Model Fit

	Saturated Model	Estimated Model
SRMR	0.073	0.073
d_ULS	1.992	1.992
d_G	1.346	1.346
Chi-Square	757.351	757.351
NFI	0.746	0.746

Source: Authors' own work on Smart PLS

7.2. Structural Model Assessment

The study was assessed by bootstrapping in the PLS SEM structural model. Bootstrapping process with 5000 bootstraps were used to analyse the predictive power

of the model and to test the hypothesis. Figure 5 and Table 6 shows the results of the analysis.

P- value indicate results of hypothesis. Hypothesis H1, H2, H4 and H5 are accepted and Hypothesis H3 failed to accept the null hypothesis which implies that there is a

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significant relationship between Perceived Risk associated with digital banking and the Satisfaction of customers in Banking Industry

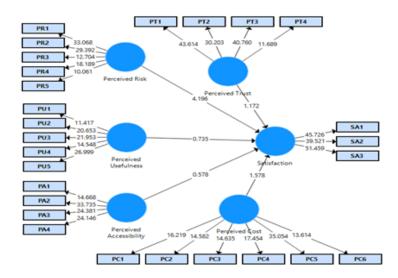


Figure 5: Structural Equation Model **Source**: Authors' own work on Smart PLS

Table 6: Hypothesis Accepted / Failed to accept

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Accepted/ Failed to Accept
Perceived Accessibility -> Satisfaction	0.094	0.087	0.163	0.578	0.563	Accepted
Perceived Cost -> Satisfaction	0.231	0.284	0.147	1.578	0.115	Accepted
Perceived Risk -> Satisfaction	0.385	0.362	0.092	4.196	0.000	Failed to Accept
Perceived Trust -> Satisfaction	0.182	0.164	0.156	1.172	0.241	Accepted
Perceived Usefulness - > Satisfaction	0.082	0.071	0.111	0.735	0.462	Accepted

Source: Authors' own work on Smart PLS

8. Conclusion

The research was undertaken to study customers perception towards digitalisation in banking services. It is concluded that there is significant relationship of perceived risk associated with banking transactions and satisfaction achieved by banking customers. In a country like India the focus of the customer is more on risk factors associated with

given service as compared to other factors. People prefer their privacy over and above any other factor. The mental satisfaction that their data is not being misused plays a primary role in determining the adoption of any new technology. The study also suggests there is no significant relationship of Perceived Accessibility, Perceived Cost, Perceived Trust and Perceived Usefulness on the Satisfaction of customers on online Banking services.



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The review found that most customers are moderately satisfied with online banking services provided by banks. Thus it is concluded there is significant relationship of Perceived risk and customer Satisfaction of customers on online Banking services.

9. Limitation and Further Study

The data for study was primarily collected by residents of Bhopal (Madhya Pradesh, India) and its surroundings. Moreover, data have been collected by means of a Google Form and distributed to people who are known to the researchers directly or indirectly. The study ignored a broader segment of society, including people from remote areas, countries and people from across the world, their online digital banking experience would certainly affect the findings of this report. The study has conducted research on 107 samples as G* Power Software suggests, further study should consider the wider universe. The analysis also avoids constructs that have shown the relevance of the current study and suggests that rigorous research will be conducted on these constructs using longitudinal cross-country data in the future.

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