

A Systematic Review of the Digital Banking Challenges in the Indian Banking Sector

Dr. Shishir Srivastava¹, and *Tapsi Srivastava²

¹ Assistant Professor, FAA Government PG College, Mahmudabad, Sitapur, Uttar Pradesh, India

² Research Scholar, Faculty of Commerce, University of Lucknow, Lucknow, Uttar Pradesh, India

*Correspondence should be addressed to Tapsi Srivastava; srivastavatapsi@gmail.com

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ABSTRACT- With the old banking system enduring a tremendous transition over the past ten years that is still going on today, the digital transformation of the banking sector has been a game-changing upheaval for the business. The purpose of this paper is to present a thorough study of the obstacles that traditional brick-and-mortar banking institutions must overcome in order to implement this change. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) served as the foundation for the approach employed in this Systematic Literature Review. The review centres on the issues associated with digital banking, scrutinizing many elements including journal outlets, article publication year, citation index journal articles, number of independent variables, and more. Although the majority of the current research is descriptive in character and is dependent on secondary data, this necessitates the contribution of empirical studies to the existing body of knowledge.

KEYWORDS- Banking, Fintech, Digital Transformation, Challenges, Systematic Literature Review

I. INTRODUCTION

The advancements of technology by humans have left everyone stunned. No business has been left untouched by

the adoption of technology and the same is the case with the business of banking. The emergence of technology has given rise to a revolutionary change in the field of banking, which is now known to be as “digital banking” [1]. The expansion of digital banking has been the outcome of the development of the internet, smartphones, and advanced technologies such as artificial intelligence, blockchain, cloud computing etc. [2]. Digital banking is the adoption of technology in such a manner which has made the functioning of the banks faster and easier. The term includes online banking, electronic banking, and mobile banking [1]. Digital banking can also be defined as a generic term which acts as a platform which offers the delivery of banking and financial services and products through electronic channels like ATMs, the telephone, the internet, social media etc. [3]. Online banking provides a range of services that allow bank consumers to use a telecommunication network to access information and complete most retail banking tasks, such as checking account balances, transferring funds between accounts, paying bills, etc., without having to leave their homes or places of employment [4].

As per the data of National Payments Corporation of India (NPCI), in the Financial Year 2022-2023 alone, India’s total volume of digital transactions was 1,17,148.65 million.

Table 1: Retail Payments Statistics on NPCI Platforms

Sr. No.	NPCI Operated Systems	FY22-23 Q1		FY22-23 Q2		FY22-23 Q3		FY22-23 Q4		F.Y-2022-23	
		Volume (in Mn)	Value (in Bn)	Volume (in Mn)	Value (in Bn)						
1	NFS - National Financial Switch	1,013.77	4,239.74	1,000.45	4,063.30	1,015.52	4,202.80	988.44	4,117.75	4,018.19	16,624.19
1.1	NFS - ATM Cash Withdrawal *	1,013.19	4,233.88	999.80	4,057.70	1,014.72	4,195.28	987.38	4,108.43	4,015.09	16,595.29
	ATM	965.58	4,057.28	952.91	3,892.09	968.19	4,025.49	943.28	3,942.45	3,829.97	15,917.31
	Micro-ATM (card-PIN)	47.61	176.60	46.89	165.61	46.52	169.79	44.10	165.98	185.12	677.98
1.2	NFS - Cash deposit transactions	0.58	5.86	0.66	6.20	0.80	7.53	1.06	9.31	3.10	28.90
	ATM	0.58	5.86	0.66	6.20	0.80	7.53	1.06	9.31	3.10	28.90
	Micro-ATM (card-PIN)	-	-	-	-	-	-	-	-	-	-
2	NACH- National Automated Clearing House	1,228.71	6,715.88	1,233.52	7,053.53	1,191.45	8,135.78	1,405.74	8,787.99	5,059.43	30,693.18
2.1	APBS Credit (Disbursement based on UIDAI No.)	460.98	751.42	359.28	349.80	406.70	555.92	556.43	818.24	1,783.40	2,475.38
2.2	ACH Debit	306.30	2,867.14	327.85	3,072.42	350.27	3,313.47	365.85	3,549.16	1,350.26	12,802.19
2.3	ACH Credit	461.44	3,097.32	546.39	3,631.31	434.48	4,266.39	483.46	4,420.59	1,925.77	15,415.61
2.4	NACH Credit	-	-	-	-	-	-	-	-	-	-
2.5	NACH Debit	-	-	-	-	-	-	-	-	-	-

3	CTS Cheque Clearing (Processed Volume)	178.24	18,554.31	176.15	17,179.76	176.37	17,561.94	176.95	18,374.38	707.70	71,670.40
4	IMPS	1,412.14	13,407.74	1,390.43	13,455.87	1,431.77	14,073.13	1,419.38	14,924.74	5,653.72	55,861.47
5	RuPay Card usage at (POS)	236.80	431.59	219.54	399.84	211.71	416.32	192.13	384.98	860.19	1,632.73
6	RuPay Card usage at (eCom)	121.27	196.33	104.99	213.95	93.93	203.84	82.64	199.00	402.82	813.12
7	AEPS (Inter Bank) Txn over Micro ATM (e.g. Cash withdrawal/ Cash Deposit)	330.29	913.31	318.79	840.51	308.54	831.43	300.58	832.39	1,258.20	3,417.63
	Cash Deposit	0.16	0.56	0.17	0.57	0.14	0.49	0.16	0.55	0.64	2.18
	Cash Withdrawal	322.50	889.69	312.92	822.40	303.54	814.87	296.55	817.01	1,235.51	3,343.98
	Others - Funds Transfer, Bhim Aadhaar Pay	7.62	23.05	5.70	17.54	4.86	16.06	3.86	14.83	22.05	71.48
8	BBPS (Bill Payment passing through BBPCU)	238.31	403.02	262.32	487.53	288.41	499.16	307.90	516.36	1,096.94	1,906.07
9	UPI - Unified Payments Interface	17,401.00	38,332.83	15,648.83	32,522.23	22,444.35	35,842.31	24,255.35	35,458.18	83,751.14	1,39,206.78
9.1	BHIM	74.57	254.04	74.17	239.41	75.50	250.13	71.37	227.67	295.61	971.25
9.2	USSD 2.0	0.28	0.38	0.47	0.52	0.50	0.55	0.48	0.54	1.73	1.99
9.3	UPI excluding BHIM & USSD	17,326.15	30,137.67	19,574.19	32,282.29	22,368.36	36,591.63	24,185.09	34,221.95	83,453.79	1,38,233.54
10	USSD 1.0	-	-	-	-	-	-	-	-	-	-
11	NETC	829.29	128.91	796.27	126.52	876.62	140.37	895.53	145.64	3,397.70	541.44
	Total Financial Txn (A)	22,989.83	75,382.92	25,151.29	76,343.64	28,038.68	82,907.07	30,026.23	87,733.39	1,06,206.04	3,22,367.02
	Non Financial:										
	NPCI Operated Systems										
			FY22-23 Q1		FY22-23 Q2		FY22-23 Q3		FY22-23 Q4		F.Y-2022-23
		Volume (in Mn)	Value (in Bn)	Volume (in Mn)	Value (in Bn)						
12	NFS Txn over ATM (e.g. Balance inquiry, Pin change, Mini Statement, etc.)	194.34		187.89		195.49		187.29		765.01	
13	AEPS (Inter Bank) Txn over Micro ATM (e.g. Balance inquiry/ Mini statement etc.)	348.12		332.20		302.23		302.92		1,285.46	
14	AEPS (Intra Bank) UIDAI Authentication over Micro ATM	546.40		556.31		595.36		617.72		2,315.79	
15	eKYC Verification (Successful Txn)	69.84		86.97		86.80		96.84		340.44	
16	Demographic Queries (Authenticated UID)	12.75		14.43		14.30		16.88		57.35	
17	AEPS Tokenization	31.21		13.76		18.52		13.45		76.94	
18	BBPS (Bill Fetch)	1,367.39		1,555.78		1,630.91		1,547.53		6,101.61	
	Total Non Financial Txn (B)	2,570.04		2,747.33		2,843.60		2,781.63		10,942.61	
				-		-					
	Total Financial + Non Financial (A+B)	25,559.87	75,382.92	27,898.63	76,343.64	30,882.28	82,907.07	32,807.86	87,733.39	1,17,148.65	3,22,367.02

Table 2: Major Challenges of Digital Banking

Major Challenges	Brief Description
1. Security Concerns	<ul style="list-style-type: none"> Threat of fraud to both customers and the banks. Frauds are constantly happening through: Vishing, Phishing, misusing UPI, remote access.
2. Technical Issues	<ul style="list-style-type: none"> Failed connectivity Lack of consistent and accurate data UPI downtimes
3. Lack of Personal Relationships	<ul style="list-style-type: none"> AI bots and customer care helplines are replacing the personalized services
4. Growing Customer Expectations	<ul style="list-style-type: none"> Customers are constantly looking for faster and better online experience from their banks.

(Source: Banking Mantra, 2022, Advantages and Challenges of Digital Banking, 2022, Bank of Baroda)

Therefore, extensive research has been done to enlighten the opportunities of digital banking, but it is also imperative to study the challenges coming out of the adoption of digital banking services. In addition to this, no study has specifically employed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) for Digital Banking Challenges in Indian Banking Sector. These kinds of studies are crucial because they depict the current state of field of a study and identify future prospects for researchers to conduct additional research in the area [7].

Through this paper, we systematically analyze the past and current state of Challenges of Digital Banking in the Indian Banking Sector. More specifically the study tries to understand the following research questions:

- How Banking has gone through the digital transformation?
- What are the main challenges faced by the Banking sector due to the adoption of digital banking services?

II. LITERATURE REVIEW

As per the study of [1] in the 1990s, various financial reforms came into play, including the banking sector reforms. The committee led by Dr. C Rangarajan devised a plan for computerization and mechanization with a focus on customer service. Once the requisite expertise in computerization has been attained, the second Rangarajan committee prepared for the expansion of automation in other sectors like money transfers, BANKNET, SWIFT, ATMs, Internet Banking etc. Subsequently, the Information Technology Act was passed by GOI to provide legal status to electronic transactions. The adoption of Internet Banking began around 1996 to 1998. ICICI, Citi Bank, IndusInd Bank and HDFC Bank were among the first financial institutions to adopt technology in the banking sector.

After that there was no looking back for the digital transformation in the banking sector. Internet banking, advanced ancillary application software, and databases, have rendered a 24/7 consumer transaction services. And fintech have transformed many digital banks into digital institutions [8]. Advancements took over the traditional banking system, but it also came with challenges. [9] Highlighted the security issues related to electronic banking or mobile banking and also threw light on malware attacks on mobile phones and banking. In addition to security threats there are other challenges as well like lack of awareness among the users as well as poor infrastructure for the adoption of digital banking [10].

III. RESEARCH METHODOLOGY

A systematic review was conducted to examine the research about the challenges of the digital banking in the Indian

Banking Industry. The guidelines of the PRISMA checklist were adhered to in this review [11]. A thorough search of the Scopus database was carried out to find pertinent material, which included articles published from 2013 to 2023. The ‘Scopus search engine’ was selected for its proven accuracy in retrieving research articles and is a widespread usage [12]. Previous research on digital banking challenges utilizing the PRISMA framework has been limited. Therefore, an extensive and comprehensive search may provide better and more in-depth findings. Thus, in order to possibly produce more in-depth insights, a thorough and comprehensive search was carried out. We used multiple keywords, “issues” OR “problems” OR “risk” OR “challenges” AND “banking” OR “digital banking”.

The studies were exported to an MS Excel spreadsheet with all their information, including titles, abstracts, keywords, authors’ names and affiliations, journal name and publication years. Each research study was evaluated based on its title and abstract to determine its relevance to the study’s objectives. Only the studies that were deemed relevant were kept on the list for the final review, those studies that were not pertinent to the study’s scope were eliminated. Furthermore, only research studies published in academic journals were considered, leading to the exclusion of conference papers and book chapters from the final Excel sheet. In addition to this, studies that did not particularly address the issues associated with digital banking were also eliminated from the final list of research studies.

IV. OUTCOME

237 articles were initially retrieved from the Scopus database. After screening their titles and abstracts, 18 articles were deemed irrelevant to the scope of the study and were consequently excluded from further consideration. These excluded studies did not focus on digital banking challenges or were not relevant to the Indian banking sector. Subsequently, the remaining 92 articles underwent full-text screening, resulting in the exclusion of an additional 32 articles due to their lack of relevance to digital banking challenges. The excluded studies covered topics such as digital banking in different countries, the general utility of digital banking, cyber risks, and blockchain technology. Thus, only research studies specifically addressing digital banking challenges in the Indian banking sector were retained for the final review. As a result, the final review comprised 60 peer-reviewed full text studies published in academic journals. The complete procedure, from first identification to ultimate inclusion, is depicted in figure 1.

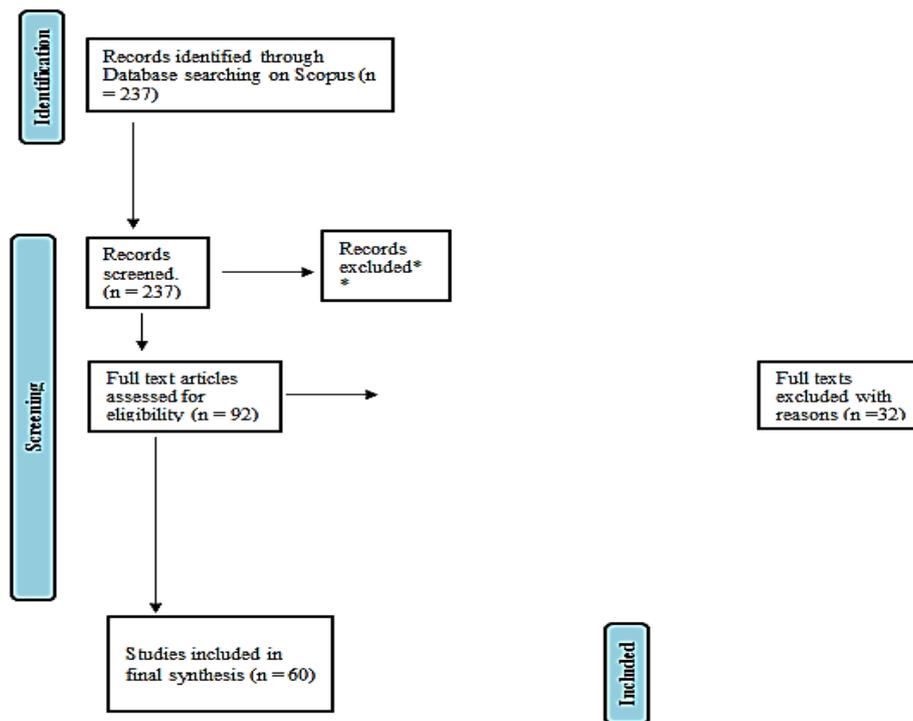


Figure 1: PRISMA Flow Chart

A. Frequency of Studies

Out of the 60 research works that were analysed, 56 (93%) were empirical, while the remaining 4 (7%) were theoretical papers discussing the issues of digital banking in the Indian banking system. Figure 2 illustrates the distribution of theoretical and empirical studies.

Furthermore, Figure 3 depicts a significant growth in the exploration of digital banking challenges within the Indian banking sector. In 2013, researchers began investigating these challenges, and in the years that followed, interest in these topics grew steadily. Notable, there has been a significant upward tendency over the years, as evidenced by the almost 140% increase in research publications about digital banking challenges published in 2023 compared to 2013.

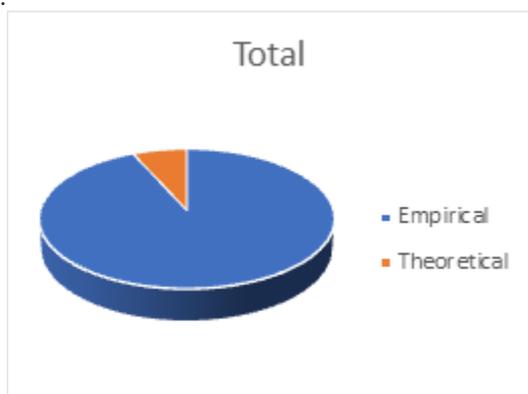


Figure 2: Division of Empirical and Theoretical Studies

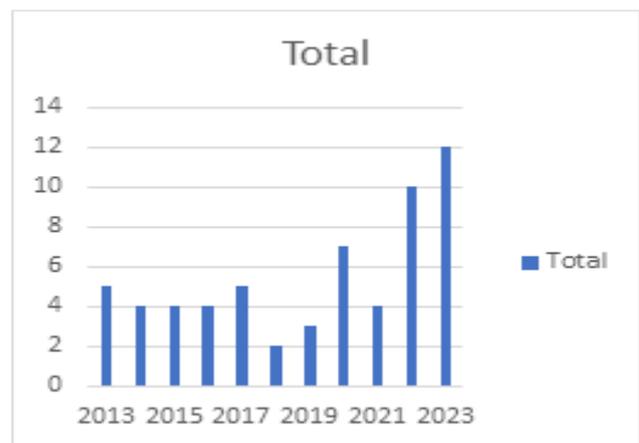


Figure 3: Growth in Studies of Digital Banking Challenges in the Indian Banking Sector

V. FINDINGS AND RECOMMENDATIONS

A. Scant Research on Digital Banking Challenges in the Indian Banking Sector

Figure 3 illustrates a growing interest in studies concerning digital banking challenges within the Indian banking sector in recent years. However, it is noteworthy that only 60 research studies have specifically focused on this concept to date. Among these, 56 studies are empirical, while the remaining are theoretical in nature. This highlights the paucity of study on digital banking undertaken from an Indian perspective.

Consequently, there exists ample opportunity for future researchers to contribute to this area of study and conduct comprehensive research. Despite digital banking being around for a decade or so, both users and bankers are encountering issues associated with its usage. Therefore, it is imperative for researchers to take the initiative and advance

research in this domain. By identifying the key challenges surrounding the Indian banking sector, these issues may be resolved more easily, thereby contributing to the enhancement of digital banking services.

B. Lack of Focus

The findings indicate that many studies on digital banking challenges have primarily focused on the perspective of consumers or users, with only two studies examining the viewpoint of bankers. However, there is growing interest among both research scholars and managers in assessing firm performance within the realm of digital banking [13]. Consequently, it is crucial to assess banking performance through the adoption of digital banking practices by banks, as depicted in figure 4.

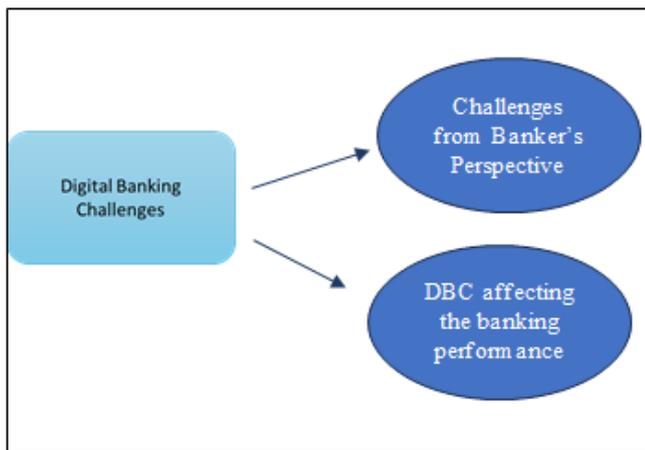


Figure 4: Untapped area of digital banking challenges

C. Frequent Challenges faced by the Users of Digital Banking in the Indian Banking Sector

As per the reviews of 60 studies it can be concluded that digital banking has surely evolved and has strengthen its roots in a populous country like India. Despite this there are few challenges which online banking is facing Figure 5.

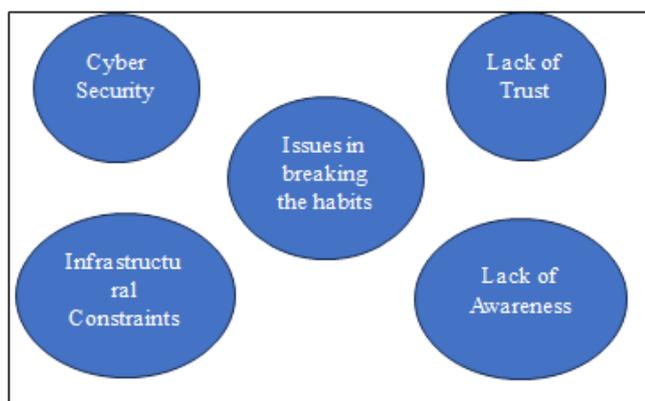


Figure 5: Challenges

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

ABOUT THE AUTHORS



Dr. Shishir Srivastava is an accomplished academician currently serving as an Assistant Professor in the Department of Commerce at F.A.A. Govt. PG College, Mahmudabad Sitapur. With a career spanning nearly two decades, Dr. Srivastava has garnered extensive experience in the field of commerce and management. His dedication to academia is underscored by his dual postgraduate degrees in Commerce and Management, which provide him with a comprehensive understanding of both disciplines.

Dr. Srivastava's academic achievements extend to his qualification in UGC NET in Management and his doctoral research conducted at the Faculty of Commerce, University of Lucknow. His research endeavors have resulted in the publication of numerous papers in esteemed national and international journals, reflecting his scholarly contributions and expertise in his field.



Tapsi Srivastava is a dedicated Research Scholar affiliated with the University of Lucknow. She has achieved remarkable milestones, being thrice qualified in the National Eligibility Test (NET) in Commerce and holding certification as an NISM V-A Certified professional. Her research interests primarily revolve around Fintech, Wealth-tech, and Banking and Financial Services. Ms. Srivastava has showcased her scholarly prowess by presenting a paper at an International Conference hosted by Amity University Lucknow, where she was honored with the Best Paper Award.