

Role of Digital Marketing and Innovations on M-Commerce Practices - An Exploratory Study

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Abstract

Banking sector is an important subset of our economy and plays a very crucial and significant part in its growth and development. The expansion and credibility of banking sector is attributed to the fact that it caters to their financial needs and accordingly provides products and services to the customers. The new millennium has witnessed metamorphosis in the banking sector. The pace and trend of transformation is all set to accelerate in the coming decade. The process of Liberalisation, Privatisation and Globalisation Model (LPG Model) banking services which were unleashed a few decades back will reach to greater heights as we step into the next decade .The innovation. Technology has brought about a paradigm shift in all aspects of banking like routine operations, transactions, products and processes, delivery of services in terms of various e-channels, credit administration and credit management, audit and compliance and Fin Techs partnership.

. Digital transformations in the banking sector have received much needed thrust because of “The Digital India Moment”. The article makes an attempt to highlight the role of technology in banking and how technology-led innovations and initiatives will determine the business of banking as a whole. The significance of these technology- driven innovations and transformations is that they put both banker and customer in a win- win situation.

Purpose: *The objective of this study is to investigate the digital innovations adopted by the Public Sector Banks and Private Sector Banks for e-commerce Practices in India.*

Methodology: *This study draws on existing literature in the form of scholarly articles, annual reports of various Banks, Newsletters and various websites related to digital innovations being adopted by the Indian Banks. It seeks to explore various aspects of digital innovations and transformations that took place in the Indian Banking Sector.*

Findings: *In this Study, we will discuss various aspects of Digital Innovations like Internet Banking, M-Banking, etc. We will analyse as to how Banks have achieved considerable advancement in technological innovations and are constantly endeavouring to integrate various technological platforms to create synergistic benefits so as to engage in long term relationships with customers, offer superior customer experience, strengthen customer-orientation leading to business growth.*

Keywords:

Digital Innovations (DI), Indian Banking System (IBS), Block Chain (BC), Artificial Intelligence (AI), Fin-Tech (FT)

1. Introduction:

At Present, every one desires a healthy, robust and sustainable banking system is critical for the growth and development of our economy. Banking system is the mainstay of our economy and Technology has become the backbone of modern-day banking. To begin with, Technology was considered as business enabler and now it has become a great business driver. The banking industry has witnessed a tremendous shift since 1969 after the nationalization of commercial banks. During the late 1980s, Indian Banking Sector had realized the relevance of computerization. There was a massive growth in the networking of bank branches. A committee was set by Reserve Bank of India (RBI) under the chairmanship of Dr. C. Rangarajan for computerization of the banking industry. In the year 1989 the committee furnishes some recommendations based on the computerization of the banking industry. In 1997 ICICI bank was the first bank to offer internet banking services. Since then to survive in this competitive market almost every bank has shifted from paper based banking to paperless banking, i.e., towards digital banking. The services provided by the banks to its customers create a huge impact on them. The success of the banks depends on the customer's attitude and perception, and satisfaction of the services rendered by the banks. At present, there are 22 private sector banks and 12 public sector banks. Almost all banks are providing online service facilities. Now people can do banking from anywhere at any time with very minimal cost. The development of electronic home banking has significantly necessitated reorganization of banking services and operations. Digital modes have replaced the brick-mortar model of branches.

2. Research Objectives:

- a) To understand the changing digital scenario in the Banks in India
- b) To examine the Digital Banking new trends and Innovations in Indian Banks.
- c) To analyse the various Digital Banking Products and Services, Digital Banking Channels offered by Indian Banks.
- d) To analyse the role of Fin Tech in Indian banks towards digital transformation.

3. Problem formulation:

Problem: 1

Use of various digital app for providing the digital innovation services to the customer in an efficient way core banking with secure and service

Problem: 2

Providing various digital modes of service for better and safe digital banking which is innovative and preventive for money transfer and distribution.

4. Hypothesis:

The researcher have taken two types of hypothesis for enhancing the digital innovation banking service in Indian Banking such as

H₀ : Null hypothesis taken that, digital Innovation mode of banking is not providing safe and secure banking service to their esteemed customer

H₁: There is need for use of digital innovation mode of banking system for a better banking service in Fin Tech areas of banking service

5. Research Methodology

The Present study is exploratory, descriptive and based on secondary data. Secondary data and information have been collected from scholarly articles, annual reports of the selected banks , “RBI Report on Trend and Progress of Banking in India’, ‘RBI Working Group Reports, ‘RBI Bulletin, RBI Annual Reports, Reports published by various Sites of Government of India and various other Websites. For present research work, various banking journals and other financial newspapers have also been referred. Various studies on this area by several research agencies have also been considered.

6. Review of Literature

In the literature Review section, the researcher have trying to their level best for proving the authenticity of the research work in a reliable way as related with the aforesaid research title “**Role of Digital Marketing and Innovations on E-Commerce Practices - An Exploratory Study**” henceforth , they have taken some of previous Authors research paper as reference and trying to further extent the research work in a better way of study ,with reference to the paper of Dr. Rajeshwari , M.Shettar (2019) [1]in his article entitled “Digital Banking an Indian perspective”, focused on the benefits of digital banking. He also stated that use of digital banking will reduce the operating cost of the bank.

Ipsita Paria and Arunangshu Giri (2018)[2] in the article “A Literature Review on Impact of Digitalization on Indian Rural Banking System and Rural Economy” describe that digital banking has immense capacity to accelerate financial inclusion apart from offering the benefits of ease of operations and low-cost factor.

According to K. Suma Vally and K. Hema Divya (2018) [3]in their article “A Study on Digital Payments in India with Perspective of Consumer’s Adoption”, highlighted that digital technology for payments system have resulted in the improvement of quality of banking service leading to the achievement of objective of cash-less society.

According to S.V. Mohana Sujana, “Digitalization in banking sector” (2018) [5] the paper focuses on role of digital banking, advantages and disadvantages of online banking sector.

7. Innovation

Innovation is a crucial component for entities to generate value and offer competitive benefits (Tellis et al., 2009). Organizations adopt innovative models to reengineer their operations and increase their competitive strengths. Competitive advantage can be maintained by embracing innovation (Aydin and Dube, 2018). Innovation envisages introduction of novel methods, new techniques, and reengineered processes to produce extraordinary results in the form of superior services and products (Oliva and Kotabe, 2019).

8. Definition and Evolution of Digital Banking

9. What is digital Banking?

So far as the word digital banking is concerned, 'Digital Banking' can be defined as digitalization of various traditional banking operations and performance and processes that were earlier available to the customers by visit to the bank's branch or ATM only. Digital Payments has been defined by Payment and Settlement Act, 2007 as "electronic funds transfer means any transfer of funds which is initiated by a person by way of customers' mandate, authorization or instruction to their bank to initiate banking transactions by debit or credit to bank account through electronic, online, internet, mobile apps and includes ATM, Point of sale, Card Payments, Direct deposits, transfers and withdrawal of funds."

Digital Banking activities include online account/ fixed deposit opening, funds transfer, credit card payments, request for cheque book, change/block pin number, Loan application, bill payment and investments.

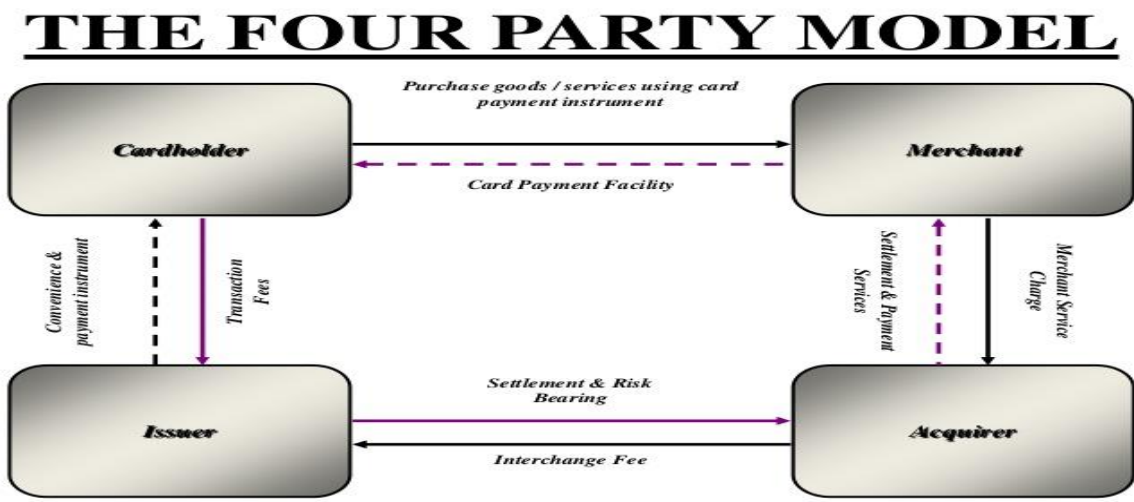
10. Evolution of Digitalisation of Banking

The history and evolution of Digital Banking is traced back to 1960s with the launch of cards and ATMs. Developments of World Wide Web and Internet Banking have also seen the simultaneous evolution of Digital Banking. Online Banking has emerged in 1990s. At that time, it was an idea, taking into consideration the security and safety of customer financial data. USA was the first country in the world to start online banking in October 1994. ICICI Bank was the first bank to initiate Internet banking revolution in India in 1997 under the brand name Infinity. India started adopting digital innovations in line with innovations adopted by the global peers. Evolution of digital banking has moved on from single channel to multi-channel to cross channel to Omni Channel.

11. The Global Evolution of Digital Banking Innovations in four phases:

- a) **Digital Banking** –Phase-1 -1998 - 2002 – E- Banking where there is a single touch point both for Customer and Bank.
- b) **Digital Banking** –Phase-2 - 2003 - 2008 – Multichannel Integration- Customer uses brand through multiples touch point with bank using siloed communication.
- c) **Digital Banking** – Phase-3- 2009-2014 Omni channel- Bank gets Unified view of customer and Customer enjoys holistic brand experience.
- d) **Digital Banking** –Phase-4- 2015 - till date - Internet of Everything - Market of one customer centricity.

[Figure:-1 refers about the four party Models of Digital Innovations in Indian Banking]



12. Digital Banking- its Evolution in India

[Table:-2 Refers about the evolution of digital Banking in India]

1980	<ul style="list-style-type: none"> • Mechanisation of Payment System Processes , Computerization • Standardisation of Cheques, Encoders, MICR Implementation and Minimal use of Bank Drafts and Cheques
1990	<ul style="list-style-type: none"> • Computerization of Branches, Expansion of Products and Services, Connectivity with other branches, • Core Banking Systems, ATM`s and Electronic Funds Transfer, On line Banking
2010	<ul style="list-style-type: none"> • Internet Banking, Mobile Banking, Real Time Gross Settlement, National Electronic Funds Transfer (NEFT) and National Electronic Clearing Services (NECS)
2011	<ul style="list-style-type: none"> • Emerging Financial Technology (Fin Tech), E- Collaborations with Fin Tech and Adoption of New Technology, Biometrics and Cheque Truncation Systems
2012	<ul style="list-style-type: none"> • Rupay and National Automated Clearing House (NACH) Introduced by NPCI. Rupay- An Alternative to Visa and Master
2013	<ul style="list-style-type: none"> • Aadhar Enabled Payment System (AEPS)
2014	<ul style="list-style-type: none"> • *99# USSD Unstructured Supplementary Service Data
2016	<ul style="list-style-type: none"> • Unified Payment Interface (UPI), Bharat Bill Payment System (BBPS) , National Electronic Toll Collection System, Bharat interface for Money (BHIM)
2017	<ul style="list-style-type: none"> • Bharat QR developed by NPCI, Master Card, Visa - Integrated Payment System - Money transferred directly in user`s linked account
2018	<ul style="list-style-type: none"> • Release of RBI Report of the Working Group on Fin Tech and Digital Banking and Draft Enabling Framework for Regulatory Sand Box
2019	<ul style="list-style-type: none"> • RBI Payment System Vision 2019-2021 released
2020	<ul style="list-style-type: none"> • Availability of NEFT on a 24x7x365 Basis i.e. 16.12.2019

The Banking System in India has witnessed radical transformation from the conventional or traditional banking system to electronic banking system of convenience. Payment Systems in India keep on evolving from manual to electronic to digital banking with new emerging technologies and Innovations. It started with 1980s with the need of Computerization, Electronic payment Systems in 2010 and move on to Digital and Fin-Tech E-collaboration. Figure 2 reflects the timelines of evolution and achievements of Payment Systems from 1980s till date.

13. Review of Achievements of Payment System Vision 2018

RBI Payment System Vision 2018 was based on the four important strategic pillars of robust infrastructure, responsive regulation, customer centricity and effective supervision. The major achievements during this period, Customer focus started to shift from paper-based clearing instruments like cheques, demand drafts and pay orders which have longer cycle of settlement of 3-4 days due to physical movement of the cheques from place of deposit to clearing centre and then to drawee bank for payment.

14. Paper Based Clearing Consists of two Components

a) Non MICR clearing: is a process of manual clearing settlement adopted by the centres where the number of participating banks in clearing house are less as well as the low volumes of cheques. Cheques are physically delivered to drawee banks.

b) Cheque Truncation System: CTS was introduced in 2011 replacing MICR clearing with Image Based Processing of truncated cheques with essential data without physical movement of cheques, are transferred electronically to clearing house and drawee banks for payments. CTS, though is a paper based payment system has shown marginal increase because it is more advanced, faster, time and cost effective and more secure.

15. Various Initiatives of Digital Innovations in Indian Banking: Various Initiatives were taken by RBI, NPCI, Government of India and Banks in promoting different types of electronic and digital banking products such as :

- **Real Time Gross Settlement (RTGS):** is an electronic and continuous transfer of funds on real time gross basis without netting. This payment system is used for high value transactions above Rs2 lakh and the beneficiary receives the funds instantly
- **Electronic Clearing Service (ECS):** is a retail electronic payment funds transfer system for transactions of bulk collection and payments

which are repetitive in nature. An ECS Debit and Credit transaction facilitates fund transfer from one bank to many bank accounts and many banks to one bank account.

- **National Electronic Funds Transfer (NEFT):** is one to one nationwide electronic payment System where individuals, corporate, firms can transfer funds to others having a bank account throughout India.

- **Immediate Payment Service (IMPS):** It is an arrangement which envisages instantaneous electronic funds transfer systems on 24x7 between all the banks in India through ATM, Mobile and Internet
- **Mobile Banking Mobile:** Banking Services are offered 24x7x365 by banks to their customers through Mobile Applications via internet banking or mobile data connection
- **Card Payment System** - Indian Customers are increasingly using the Cards more for shopping at point of sales, online shopping through internet and mobile banking as compared to cash withdrawals at ATMs
- **Bharat Interface for Money (BHIM)** is an application for funds transfer on Unified Payment Interface (UPI) for quick transactions of payments in a simple and easy way. Customers can send and receive money through BHIM Application by using Virtual Payment Address i.e. UPI ID and Mobile number. BHIM transactions from NPCI Platform show that BHIM volume for the year FY2019-2020.
- **ATMs and Point of Sales (POS)** numbers are also increasing. No. of ATMs and POS as on March, 2020 is 210760 and 5137822 respectively. Amount of ATM transactions are 26769158 lakhs and POS transactions are 4764615 lakh in 2019-20.
- **Aadhaar Based Retail Payment Systems** consists of Aadhar Enabled Payment System (Inter Bank) through Micro ATMs (e.g. Cash Deposit /Cash withdrawal) and APBS Credit (UIDAI number driven Disbursement).

16. Emergence of New Emerging Financial Technology (Fin-Tech) & E-Collaborations- a New Paradigm in Indian Banking Industry

According to Financial Stability Board (FSB), of the Bank for International Settlements (BIS), “Fin Tech is technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services”. All these products are having their existence in global finance, which with or without intervention of a nodal intermediation agency, create association of the lenders and borrowers, share information between seekers and providers.

[[Table-2- Showing Significant Innovations in the Areas of Fin. Tech (Sources—RBI Report on Fin-Tech and Digital Banking]

Clearing ,Settlement & Payments	Lending, Capital raising & Deposits	Market Provisioning	Management of Investment	Risk Management &Data Analytics
Digital currencies	Peer to peer lending	Cloud computing	Smart contracts	Artificial
Mobile and web-based payments	Crowd-funding	Smart contracts	Robo advice	Intelligence,
Distributed ledger	Digital currencies	e-Aggregators	e-Trading	Robotics &Big data
	Distributed Ledger			

Gomber et al. (2018) stated that Fin-Tech or digital innovations have played pivotal role in transforming financial markets. Fin Tech innovations are adopted by all Banks in varying degree to accelerate the process along with various dynamic start-ups.

The Indian Banking and Payment System is witnessing various new emerging technologies like Block chain, Artificial Intelligence (AI), Robotic Process Automation (RPA), Bio metrics, Chatbots, Machine Learning, and use of Big Data and Predictive Analysis offered by the Fin-Tech Companies.

17. Emerging Technologies

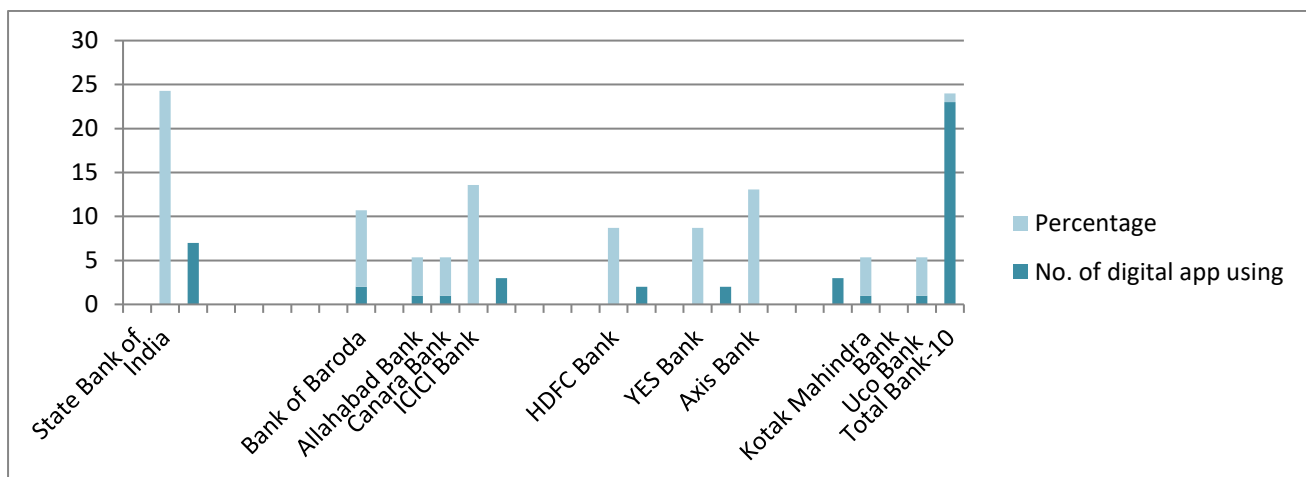
a) Artificial Intelligence (AI): Odinet, (2018) defined Artificial Intelligence as “AI is best understood as the overarching field that seeks to create complex machines that can exhibit all characteristics of real human intelligence”. AI facilitates increased revenue, reduced costs, better compliance and higher profits. A Report by Accenture (2018) has pointed out that AI has the potential to add USD 957 billion by 2035 (1.3% of GDP) to the Indian economy. Thus, an illustrative use of AI by banks operating in India is presented in the table below.

Name of Banks	No. of digital app using	Use of AI	Percentage
State Bank of India	07	<ul style="list-style-type: none"> ➤ Partnered with Pay jo to launch SBI Intelligent Assistant(SIA) an AI-powered chat assistant designed to address customer enquiries ➤ Partnered with Hitachi for payment services that will use the AI technology of Hitachi for SBI Payment Services ➤ Utilizing IBM Watson to perform a variety of jobs <ul style="list-style-type: none"> ➤ AI-based solution presently in use developed by Chapdex. ➤ The chat assistant, known as SBI Intelligent Assistant, or SIA, will help customers with everyday ➤ Deploying artificial intelligence (AI) in a big way to improve efficiency, detect human behaviour and reduce operational costs. ➤ Used AI and Robotic Process Automation (RPA) can help in making internal banking processes more efficient. 	24.28
Bank of Baroda	02	<ul style="list-style-type: none"> ➤ Using AI empowered robot ‘Baroda Brainy’ ➤ Using AI solution by Quadra tyx 	8.70
Allahabad Bank	01	<ul style="list-style-type: none"> ➤ Using AI enabled app ‘emPower’ for e-commerce payments 	4.35
Canara Bank	01	<ul style="list-style-type: none"> ➤ Using humanoid robot Mitra and Candi 	4.35
ICICI Bank		<ul style="list-style-type: none"> ➤ Using iPal, an AI-based Chatbot 	13.58

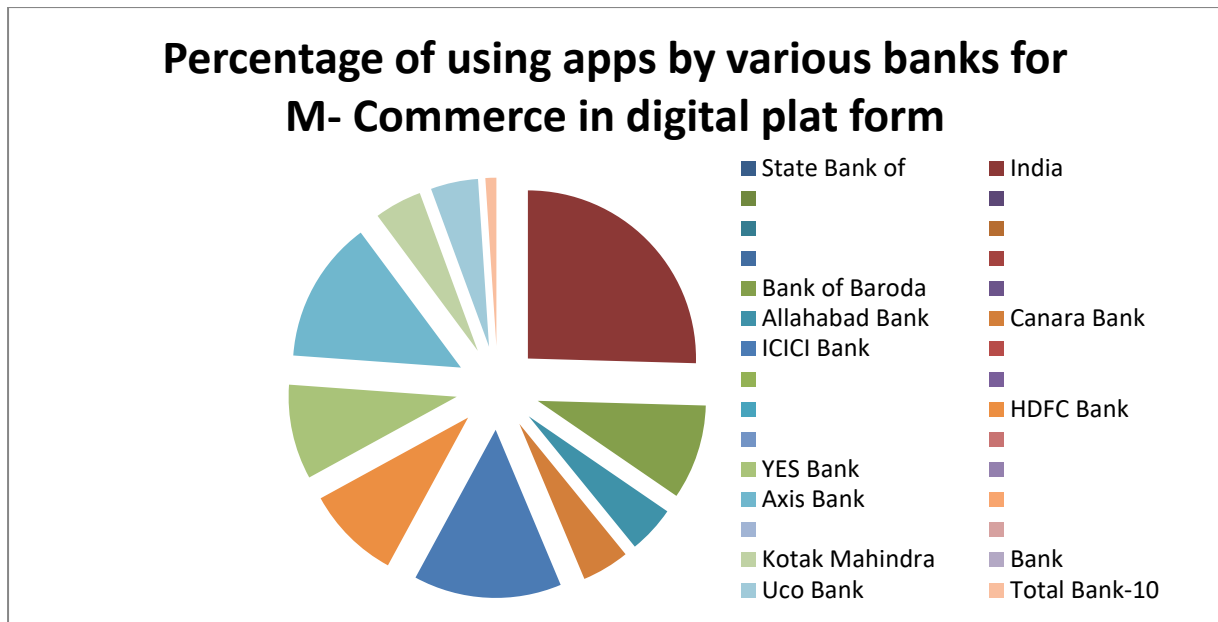
	03	<ul style="list-style-type: none"> ➤ AI features such as facial and voice recognition, bots etc are being leveraged. ➤ Deployed robotics software to ease over 200 of its processes. 	
HDFC Bank	02	<ul style="list-style-type: none"> ➤ Launched IRA 2.0, an interactive humanoid ➤ ‘Eva’ an AI-based Chat bot, developed by Sense forth AI Research 	8.70
YES Bank	02	<ul style="list-style-type: none"> ➤ Using YES TAG ➤ Using AI solution by Quadra tyx 	8.70
Axis Bank	03	<ul style="list-style-type: none"> ➤ Launched an AI enabled app developed by Active AI ➤ “Thought Factory”- an Innovation Lab based on innovative AI technology ➤ Solutions for the banking sector. 	13.58
Kotak Mahindra Bank	01	<ul style="list-style-type: none"> ➤ Using AI solution by Quadrat yx 	4.35
Uco Bank	01	<ul style="list-style-type: none"> ➤ Using AI solution by Quadrat yx 	4.35
Total Bank-10	23		100%

Table-3- Illustrative Use of AI by Banks operating in India (Source: Annual Reports of Banks & Media Reports)

[Figure :2 Bar graph stated about the Graphic Representation model of Use of Apps by various Banks]



[Semiotic models of Pie Chart for using apps by various banks and its percentage]



b) Data analytics – Data analytics techniques assist us to take raw data and uncover patterns to derive valuable insights from it. Several Indian banks like HDFC Bank, SBI, ICICI, Bank of Baroda, and Kotak Mahindra Bank have already initiated data analytics initiatives.

(c) Crypto currency: It is a peer-to-peer (private) digital system of payment with the transactions recorded in a public ledger using its own unit of account.

(d) Chat-bots: It facilitates quicker resolution of customer related issues. It is more effective than traditional methods like email, phone etc.

(e) Big Data: Big data technology aids in analysis, processing of various transactions and data for extracting crucial information for sustaining competitive advantage. It helps in recognizing recent market movements and reorganizing operational issues and process to manage risks.

(f) Block chain Technology: It holds the potential to influence various banking transactions like Trade Finance, Cross Border Payments, and Digital Identities etc. Operational efficiency, simplicity, transparency and customer experience in banking can be improved by the use of Black chain technology.

(g) Cyber Security: Sometimes online transactions are susceptible to risk of data breach. Hence, banks need to strengthen cyber security in banking processes. Cyber security in banking transactions helps in protecting customer assets.



[Figure -3 refers about various modes of Digital Banking in India]

(h) Robotic Process Automation (RPA): Robotic process automation has streamlined back office processes which used to be performed by Bank employees. With the shift from man to machine, banks have witnessed improvement in efficiency, cost reduction and manpower related issues.

(i) Cloud Computing: Rapid development of products and services is possible due to the adoption of Cloud Computing Technology. With the usage of Cloud Computing, services like Core banking, Net Banking, Mobile Banking, Wallet and Card Management are handled properly. Productivity, performance and profitability can be improved by Cloud Computing. NASSCOM reports that the cloud market in India is also expanding and expected to grow to \$7.1 billion by 2022. State Bank of India has collaborated with Oracle and Bank of Baroda has collaborated with IBM for acceleration of Cloud Innovation in their respective Banks.

(j) Distributed Ledger Technology (DLT): A distributed ledger is a database allowing recording of the transaction of assets and their details in multiple places simultaneously. There is no central data store or administration functionality in Distributed Ledger Technology which is available in traditional databases.

(k) Predictive analytics is used as a decision-making tool in a several industries and disciplines, such as insurance, banking and marketing. Predictive analytics can provide a holistic view in the customer's journey with the bank and further help strengthen the relationship. Banks need to embrace the capabilities of data and analytics to improve risk modelling and fraud detection.

(L) Machine Learning: Machine learning models can also predict which banking tools individual members might use and recommend them so that customers can make better financial decisions. These solutions can be used by banks for risk prediction, risk prevention, fraud detection, investments, investment modelling customer services, and customer modelling, etc. Artificial Intelligence (AI) Application is adopted in Machine Learning.

18. Challenges and Opportunities in Implementation of Digital Innovations

a) Sustainable Competitive Advantage: The execution process of digital innovations in Indian banks confronts the challenges of sustainability and continuity. Customer education and Financial Literacy should be continued to make more people digitally inclusive.

b) Customer Retention: has become another important challenge in today's post-loyalty world. Consumer's demands are changing in this tech savvy and highly digital era as they are not tied up with traditional banks. Technology giants are offering superior digital offerings like Amazon, Face book, Google to attract the customers. Banks need to innovate or partner with them.

c) Digital Native, Intelligent, Social, Connected (DISC) Approach - need to be adopted by the banks today to understand customer context and provide fresh, agile and relevant digital solutions to consolidate their digital leadership. Merchant Acceptance and Infrastructure need to be increased both in rural and urban space.

d) Skilled Resources: Automation in banking process through Digitalization, Artificial Intelligence (AI) and Robotic Process Automation (RPA) has brought about sociological challenges. Banks need to understand the impact on jobs and train the workforce with new IT skills,

e) Cyber Security Risks: The Centre for Software and IT Management (CSITM) in their study conducted at IIM Bangalore has pointed that one of the most important challenges in building trust among the customers is about cyber security risks. In their study, they have identified the potential risks in Digital wallets, specific bank's app for account holders, direct link with user's bank, and basic USSD services. Other types of security risks are phishing, vishing, hacking, credit card frauds, cloning etc.

f) Lack of Technological Infrastructure: A country requires an adequate level of infrastructure in order to adopt the appropriate technology and provide the necessary support for its growth and usage. However, the infrastructures in India need to develop.

19. Opportunities

a) New Innovative Product Design: Due to various initiatives taken by RBI, Government of India and Banks in promoting digital innovations, there has been increasing adoption and usage of digital banking by customers. The new age customers are aware of the benefits and ready for new digital solutions. Banks need to focus more on product design, service delivery, and customer support. Bharat Bill Payment, Interbank Web based Platform, E-mandate part of NACH and Digital platform for high value electronic transactions are the proposed new launches by NPCI.

b) Better Regulatory Environment: Data Connectivity and the Spread of Smart phones have improved the digital ecosystem by providing an efficient and effective regulatory environment.

c) Leveraging the power of Social Media: Social Media Technology, Digital Assistants and third party channels like Facebook, Twitter for leveraging internal capabilities are likely to become the primary channels by 2022 apart from online and internet banking.

Hypothesis Testing

In the section of Hypothesis Testing the researcher have taken number of Response model for justifying the hypothesis, therefore, they have taken 10 Banks of different branches with taken 500 Customers from Bhubaneswar smart city, Odisha (India) (*Each having 50 respondents) with gender discrimination and different profession , Business ,Cultivator, Govt, Service , Private service , Company Service etc. After obtained the data in will presented in appropriate data table then classified the data for its accurate analysis and interpretation thereon. Here, various a response models are given for reader’s kind perusal and perception:

Data Table: I

Serial No	Name of Banks	No Respondents		Total Respondent’s	Use of digital Innovation App		Mean Value		Percentage
		Male	Female		Yes	No	M	F	
2	Bank of Baroda	25	25	50	32	18	64.0	36.0	100%
3	Allahabad Bank	28	22	50	31	19	62.0	38.0	100%
4	Canara Bank	35	15	50	28	22	56.0	44.0	100%
5	ICICI Bank	32	18	50	32	18	64.0	36.0	100%
6	HDFC Bank	23	27	50	34	16	68.0	32.0	100%
7	YES Bank	36	16	50	31	19	62.0	38.0	100%
8	Axis Bank	32	18	50	27	23	54.0	46.0	100%
9	Kotak Mahindra Bank	26	24	50	34	16	68.0	32.0	100%
10	Uco Bank	25	25	50	26	24	52.0	48.0	100%
	Total Bank-10	290	210	Total-500	309	191	618	382	1000

Final Result Table:

No of Banks	10	Mean Value	MD	Average MD	% Response	
					Positive	Negative
No of Respondents (F)	210	42.0	-8.0	16.0	61.8	38.2
No of Respondents (M)	290	58.0	+8.0			
Total Respondents	500					

As per the aforesaid data table and mean value for female customer is 42.0 and male customer is 58.0 and the Mean difference in between is 16. 0, and the number of banks is 10 d.f is (N-1=09).it is proved that more customers are preferred use of Digital innovation banking system. Hence, table contains critical values of the Student's t distribution computed using the cumulative distribution function. The t distribution is symmetric so that $t_{1-\alpha,v} = -t_{\alpha,v}$.

Thus, the t table can be used for both one-sided (lower and upper) and two-sided tests using the appropriate value of α .

The significance level, α , is demonstrated in the graph below, which displays a t distribution with 10 degrees of freedom. The most commonly used significance level is $\alpha = 0.05$. For a two-sided test, we compute $1 - \alpha/2$, or $1 - 0.05/2 = 0.975$ when $\alpha = 0.05$. If the absolute value of the test statistic is greater than the critical value (0.975), then we reject the null hypothesis. Due to the symmetry of the t distribution, we only tabulate the positive critical values in the table Thus the significance level at 0.1 level is 0.8186 and 0.5 level is 0.8289, the obtained data is more than the table value, therefore the use of AI in Digital innovation in banking sector is justified and the null hypothesis has been rejected and the alternative hypothesis is accepted due to its highly significance and justified in both the levels of significance level of 0.01 and 0.05 alpha level

20. Suggestions and recommendations:

- Loss of data can be avoided by employing well trained IT experts
- Tough laws should be enacted for cyber- attack.
- Workshop and seminar related to digital payments should be organized so that the common people and rural people can get maximum benefits of bank facilities. Hence, Digital Banking Literacy programs should be run in rural and backward areas.
- Technology should be developed and expanded so that the people from remote areas can also take advantages of it.

21. Findings of the Study

- Digital innovations help in reducing operating costs and widening the customer base.
- Reports can be generated and analysed for various purposes at different point of time.
- It is safer way to handle financial transactions and to prevent misuse in DBT under Digital Banking.
- The Indian Banking and Payment System is witnessing various new emerging technologies like Block chain, Distributed Ledger Technology (DLT),Artificial Intelligence (AI) Machine Learning, Robotic Process Automation (RPA), Bio metrics, Chat bots and use of Big Data and Predictive.

22. Limitations and Scope for future Research

- The banking in India has been transforming itself at a rapid pace, especially with entry of Fin Tech companies and the Payment Banks we can expect further changes.
- The public sector banks have been merging to create stronger entities than other Non-Banking Financial Companies (NBFCs) are also making forays in banking.
- One needs to keep an eye by continuously examining the changing scenario over next few years.
- The digital Innovative banking has limited to current players in banking which it will be prudent to include others also in the research.

Conclusion

In conclusion, we may conclude that as per vision of Digital India programme is to transform India into a digitally empowered society and knowledge economy. The above statistics and discussion shows that

- The rising trends in adoption of digital innovations and new Fin Tech emerging products. While there will always be challenges, opportunities also exist for those banks and financial Institutions who are ready to innovate and offer more digital financial products to the customer.
- The Digital Payment Ecosystem with Fin Tech collaboration and global technological giants are acting as aggregators for the retail transactions.
- Measurement of Digital Payments should be carried out at regular interval to study and monitor the progress.
- The new emerging financial technologies in Indian Payment System will continue to be evolving, reaching global heights with regulatory compliance and risk management to achieve the vision of Digital India
- By digital India Programme for ensuring better customer service thereby attaining the goal of cash-less economy. Both the Public Sector Banks and Private Sector Banks are moving towards technology-intensive customer services.
- By digital technology opportunities and challenges, the banking industry is rising along with digital innovation. Digital banking has become more popular during the pandemic period of lockdown as related to COVID-19 effect .

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