DEVELOPMENTS AND TRENDS IN THE BANKING AND FINANCE SECTOR

Dr. Yamini Negi

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First Impression: January 2022

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ISBN : 978-93-93810-00-7

Rs. 650/- ($18)

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Published by:
Empyreal Publishing House

PREFACE

Banking and Finance Sector is an indispensable segment and critical for an economy to flourish. The financial sector has experienced a tremendous transformation in their operational process due to the onset of digital technology. These transformations are widely accepted by customers also as it makes financial services more convenient, user friendly and flexible. With digitization, benefit of various banking facilities like NEFT, RTGS, IMPS, mobile banking can be taken anywhere and anytime. UPI (Unified Payment Interface), a new trend, has also transformed the way we transfer money. It takes only few seconds to transfer the funds from one account to another. The emanation of financial technology leads to the introduction of FinTech companies, broadens the scope of block chain for preventing fraud practices, Artificial Intelligence & Robotics for providing support in customer services and many more. Even during COVID-19 pandemic, this industry witnessed a huge downpour of digital transactions. These changes are compelling the financial institutions to bring technological changes in their process and change the methods on which they were formerly dependent upon. Keeping these trends in view, this book was visioned to publish the researches being done on the developments and the latest trends in banking and financial sector. We hope this book will be of great help and provide insights to students, research scholars, academicians and corporates and make them well versed with the new trends that are revolutionizing the financial sector.

ACKNOWLEDGEMENT

I feel honoured to express my special thanks and gratitude to all those who supported me in bringing out this edited book on “Developments and Trends in the Banking and Finance Sector”.

First of all, I would like to thank the Great Almighty for his endless love, for always showering blessings and guiding me to work on the right path of life.

I sincerely appreciate and acknowledge the contribution of the researchers as without their hard work and cooperation it would not be possible to complete this book.

I heartily acknowledge the endless support and best wishes of my parents Sh. V.K. Gupta and Smt. Urmila Gupta who has been the constant source of inspiration for me. I would like to extend special thanks to my Mother in Law Smt. Ganga Negi and my Father in Law Sh. Umed Singh Negi for always encouraging me and showering their love and blessings immensely.

I would also like to acknowledge the support and encouragement by my husband Mr. Bhupender Singh Negi and my two little soldiers Yagya Negi and Bhumin Negi.

I also express my special thanks and gratitude to Empyreal Publication House for publishing this book.

Dr. Yamini Negi

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A STUDY ON CUSTOMER SATISFACTION TOWARDS BANKING SERVICES AFTER COVID-19 LOCKDOWN

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ABSTRACT

The main focus of this study is on the banking sector how the customer is satisfied by perceiving the services rendered by the banking people after pandemic after covid-19 lockdown, how the customers perceived the services in the bank. Service quality is studies within the wide range of different determines in the banking institution. The sample size is 30 customer who are having account with different banks in selected areas. It is descriptive study based on convenient sampling method and self-constructed questionnaire is used for data collection. the researcher made the effort to measurer the service quality demission's which enhances the customer satisfaction toward banking services from the study it is clear that almost the customers are very much satisfied with services rendered by the bank in this pandemic situation. All over satisfaction regarding banking services are very much appreciated by the customers moreover Reliability, Assurance and Empathy are ranked first in the banking services.

INTRODUCTION

In this present era customer satisfaction is becoming key factor of every business and now it became the part and parcel of every organisation, in that banking industry place the major role. Customers are focal point of every business to satisfy the customer the banking industry should meet their expectation according to their preference. Consumer is the focal point of the all-business activities. Business depends and revolves around him. Most of the consumers whether rich or poor, literate or illiterate, urban or rural often uses the services of banking. By the rapid changes in banking sectors there is a need to satisfy their customers. India being a developing country, has to face a lot of challenges in order to provide a good service quality in their business. In the view of Gandhiji "A Customer is the most important visitor on our premises he is not dependent on us, we are dependent on him" it is true without customer there is no business, to retain and serve the business world the business organisation should meet the customers expectations and satisfy them in all aspects because numbers of services are increasing in the financial institution either in private sector banks and public sector banks so, here the competition arises between the banks while provides same products. Where as service quality is linked with customer satisfaction, moreover service quality is a perception of the customers in the banking institutions. A business which performs high level of service quality is likely to be the capable of meeting the customers desire and needs.

REVIEW OF LITERATURE

Chitra. S and A Ramasethu (2020) In this article the author studies the customer's satisfaction towards the banking services provided by SBI, the customer are almost satisfied with SBI services, the researcher identified that most of the customers are not aware of the services and new policies of the bank, so here is the need for the SBI bank should increase their awareness programmes regarding the services to the customers.

Sajooj kumar K.P(2017) In this article the author mainly focused on various factors that determined the customer satisfaction like employee's behaviours, banking services ,banking performance and other services which add value to bank . in this study he emphasizes, the importance of customer's satisfaction based on the banker's education which should be improved and enhanced the quality of service and plan for customers beneficial programmes.

Md. Mobarak Karim and Md .Addul Latif Mahumud (2018) In this article the author said that the bank should highlight the reputation of the customer satisfaction and take further action in order to enhance the quality of services, in other senses the customer satisfaction depends on the positive relationship between customer and employees in the banker sector

Gholamreza Marhaba(2015) According to author customer satisfaction is one of the major parameter for the service provider in the Indian banking sector, one important aspect that banks are facing the competition if they perfectly known the requirement and the expectation of the customers in traditional banking as well as in online banking .

Singh & kaur (2011) the author identified the customer satisfaction in the outcome of several determinate namely social responsibility, employee responsiveness, appearance of tangible, the competence and reliability of the employees presently the most powerful determinate is word of mouth. In the view of author customer satisfaction influenced by social responsibility and positive word of mouth and reliability.

Kotler & Keller, 2006 ''Satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a product's performance (outcome) in relation to his or her expectation''.

Bloemer, Ruyter, and Peeters, 1998 Bank customer satisfaction is regarded as banks fully meeting the customers' expectation and also said to be a feeling or attitude for med by bank customers after service, which expressly connects the various purchasing behaviour (Jamal and Naser, 2002)

From the above literature it is clear that the customer satisfaction mainly depended on the service render by banking sector and it is very important that the banker should meet the expectation of the customer and focus on the programme that make more impact on the satisfaction of the customers.

NEED OF THE STUDY:

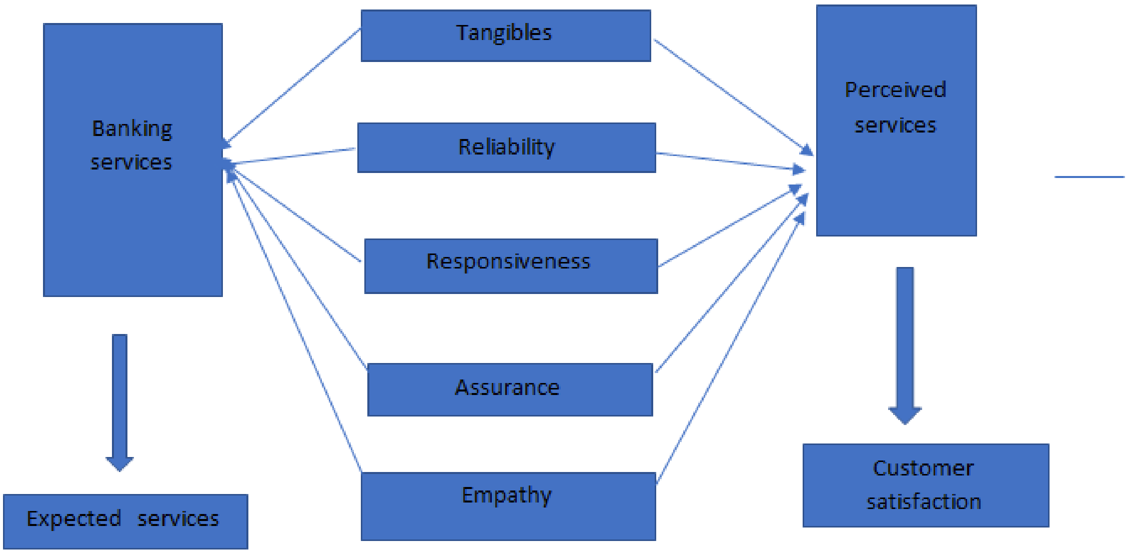
The crucial aspect of banking industry is satisfying their customer and from the literatures review it is clear that there are so many factors which makes more impact on customer satisfaction in banking sector, there is a continually research going on the concept by the researcher because there is a rapid change in the perception of the consumer , services but in the recent times the very rapid change in the technology during the covid-19 the services has been increased ,so the traditional banking has been taken shape into modern banking. The bank has be more concerned about satisfaction of customer because their expectation are very much increased in the terms of service quality and personal attention by the bankers, so there a need to study the banking sector service quality.

THEORETICAL FRAME WORK

CUSTOMER SATISFACTION : Facilitates the measure of how service and products provided by company meet customer expectation. It is a key performance indicator in business terms. Typically, service firms monitor and examine the satisfaction level of customers on an ongoing base by using different scales like Likert, to measure the level of customer satisfaction which is mainly based on service encounter experienced on their last visit (Peterson and Wilson, 1992).

SERVICE QUALITY : Parasuraman propose the gap model for service quality, that the operationalized service quality is gap between performance and expectations perceptions of customer (SERVQUAL) .Parasuraman et al. 1985, SERVQUAL has five quality attributes

THEORETICAL FRAME WORK OF SERVICE QUALITY



(Source: Researcher Developed Own Model)

OBJECTIVES OF THE STUDY

1. To study the customer awareness on banking services.
2. To study the customer satisfaction regarding banking services
3. To know which determinates, make more impact on customer satisfaction towards banking services.

HYPOTHESIS :

1. There is a relationship between service provided and customer satisfaction.
2. There is a relationship between age and customer satisfaction.
3. There is a relationship between education and customer satisfaction.
4. There is a relationship between awareness and customer satisfaction.
5. There is a relationship between usage of banking services and customer satisfaction.

RESEARCH DESING METHODOLOGY

The study is descriptive research using quantitative methods for collecting data using survey method with convenience sampling. the sample are from were surveyed for the study. A structured questionnaire is designed to collect the data with closed ended and open-ended questions. In the study the researcher collected data from both primary data (from responded) and from secondary data (journals, websites, books and made discussion with student group) to get information The researcher designed questionnaire using five-point scale to measure the satisfaction of customer which consists of five determinates and each determinate has set of parameters which customer should indicates their satisfaction on it. the five-point scale varies from 1 to5 points (every time to never). when the researcher approaches the customer, they can opt for any option in the questionnaire if they felt comfortable or not comfortable with the service provided by the bank in the study. A total of 30 respondents are selected from study area. The responses were collected through interaction method and Selection of respondents was done using the random numbers from the visited respondent for the bank.

Table .1

S.no	Methodology in the study	A Brief Draw Of Study
1	Research Type	Descriptive study
2	Sampling method	Convenient Sampling
3	Size of sample	30 Customers
4	Nature of respondents	Customers who having account with the bank
5	Nature of data	Primary and secondary data
	Primary data	Interview method
	Secondary data	Journals, websites, books , discussion with students
6	Instrument used for research	Self designed Questionnaire
7	Analysis of Data collected	frequency and Percentage method is used for data Analysis

(Source: Researcher own model)

DATA ANALYSIS OF THE STUDY

The main objectives of the study is to find out the customer satisfaction on banking services which depends up on various determinates. the collected data is analysed by using frequency and percentages tools for study **.** The selected population are (30) of the total population, and Appropriate treatment has been done to the raw data and logical conclusions were drawn based on the findings.

RESULTS AND FINDNGS

From the data analysis it is clear that customers satisfaction certainly depending upon the service provided by the banking sector . the banking organisation which supplies the product or services should meet the customer expectation. For meet that expectation and making the brand image the banking should afford to satisfy the customer at large.

Table-2 Age wise classification

S.No	Variable	Responded	percentage
1	20 to 30years	15	50.1%
2	30 to 40years	12	40.3%
3	40 to 50 years	03	10%
4	50 and above	00	00

Source : primary data

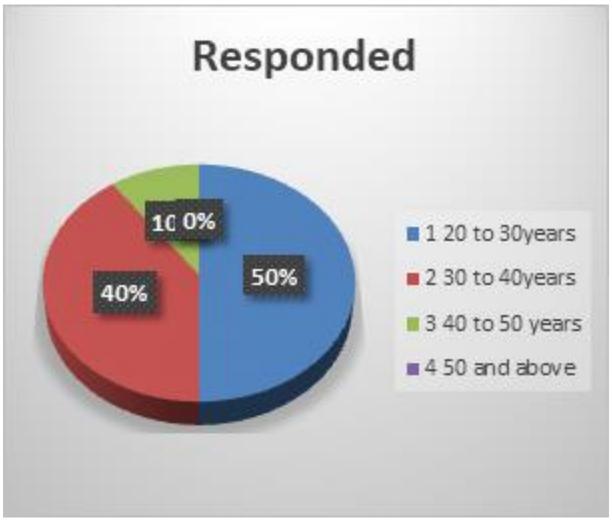


Fig-1 Age factor

Interpretation : from the table 2 and chart the demographic data relives that 50 % of the respondents are between 20 and 30 years old, 40% between 30 and 40 years old, 10% between 40 and 50 years old and 6% are older than 55 years (Figure 1). The large number of young customers is consistent with the banks recent effort to attract and retain customers.

Table-3 Education wise classification

S.No	Variable	Responded	percentage
1	Intermediate	12	40%
2	undergraduate	15	50%
3	Post graduate	03	10%
4	others	0	0%

Source: primary data

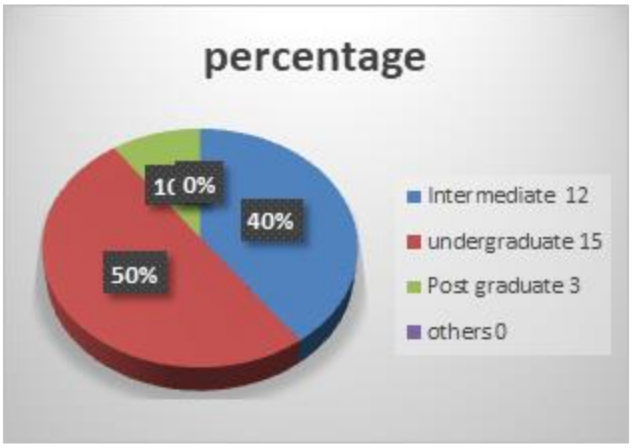


Fig-2. Education

Interpretation : from the table-3 and chart the education data relives that 40 % of the respondents are having intermediate qualification , 50% of the respondents are undergraduate and 10% having post-graduation degree from fig-2 .So here the researcher find that undergraduate respondents are more impact of the banking.

Table-4 Awareness wise classification

S.No	Variable	Responded	percentage
1	ATMS	15	50%
2	Depository machines	02	7.1%
3	Schemes provided	06	20%
4	Bank website	03	10%
5	Loan producers	04	13%
6	Compliant website	00	0%

Source : primary data

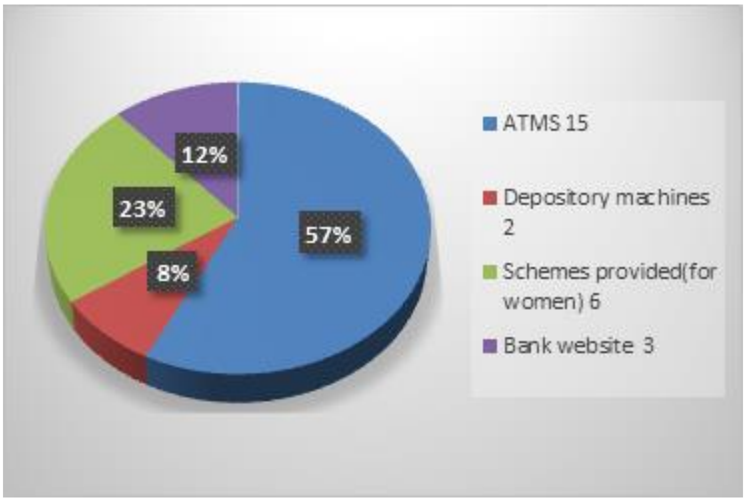


Fig-3 Awareness on services

Interpretation: from the table 4 and chart the awareness level are very high in women which the percentage of aware of usage of ATMS are 50% and the awareness on schemes provided with the bank is of 20%, loan producers and bank website is of little aware with percentage of 13% and 10% and lastly the compliant website is not aware with very low percentage with00% hence the researcher find the banker should give the awareness programmes to their customer about their services and websites and complaint systems.

Table-5 Usages wise classification

S.No	Variable	Responded	percentage
1	Every time	14	47.1%
2	Three times in a month	06	20%
3	Five times in a month	10	33.1%
4	Never in a month	00	00

Source-primary data

Fig-4 frequency of usage of services

Interpretation: From the table 5 and chart the numbers of visits to bank makes more impact on banking services ,47% of respondents visits every time and 20% of respondents visits three times and 33% of respondents visits five times in month , this shows the respondents are very satisfied with bank, it means the banker have offered better service to their customers. From the analysis it is clear that the respondent are very much satisfied with the banking services.

SERVICE QUALITY DIMENSIONS

Table-6 Tangible

S.No	Variable	Responded	percentage
1	Every time	14	47.1
2	Occasionally	06	20
3	Sometimes	10	33.3
4	Rare	00	00
5	Never	00	00

Source-primary data

Interpretation: From the table 6 and chart tangible determinate makes more impact on banking services ,47% of respondents are satisfied every time and 20% of respondents are satisfied occasionally and 33% of respondents are satisfied sometimes ,0% rare and % never this shows the respondents are very satisfied with bank tangible determinate .

Table-7 Reliability

S.No	Variable	Responded	percentage
1	Every time	16	53.2
2	Occasionally	08	27.3
3	Sometimes	06	20
4	Rare	00	00
5	Never	00	00

Source-primary data

Interpretation: From the table 7 and chart Reliability determinate makes more impact on banking services ,53.2% of respondents are satisfied every time and 27.3% of respondents are satisfied occasionally and 20% of respondents are satisfied sometimes ,0% rare and % never this shows the respondents are satisfied with bank with Reliability determinate

Table-8 Empathy

S.No	Variable	Responded	percentage
1	Every time	18	60.3
2	Occasionally	08	26.6
3	Sometimes	04	13.3
4	Rare	00	00
5	Never	00	00

Source-primary data

Interpretation: From the table 8 and chart empathy determinate makes more impact on banking services ,60.3% of respondents are very much satisfied every time and 26 % of respondents are satisfied occasionally and 13.3 % of respondents are satisfied sometimes ,0% rare and % never this shows the respondents are very satisfied with bank Empathy determinate

Table-9 Responsiveness

S.No	Variable	Responded	percentage
1	Every time	15	50
2	Occasionally	08	26
3	Sometimes	07	23
4	Rare	00	00
5	Never	00	00

Source-primary data

Interpretation: From the table 9 and chart Responsiveness determinate makes more impact on banking services ,50 % of respondents are satisfied every time and 26% of respondents are satisfied occasionally and 23% of respondents are satisfied sometimes ,0% rare and % never this shows the respondents are very satisfied with bank Responsiveness determinate

Table-10 Assurance

S.No	Variable	Responded	percentage
1	Every time	18	60
2	Occasionally	08	26
3	Sometimes	04	15
4	Rare	00	00
5	Never	00	00

Source-primary data

Interpretation: From the table 10 and chart Assurance determinate makes more impact on banking services ,60 % of respondents are satisfied every time and 26% of respondents are satisfied occasionally and 15% of respondents are satisfied sometimes ,0% rare and % never this shows the respondents are very satisfied with bank Assurance determinate

Table-11 All over satisfaction on service quality determinate

Sno	Determinates	Respondents	percentages
1	Tangible	30	47.1

 ISBN: 978-93-93810-00-7

2	Reliability	30	53.1
3	Empathy	30	60
4	Responsiveness	30	50
5	Assurance	30	60

Source primary data

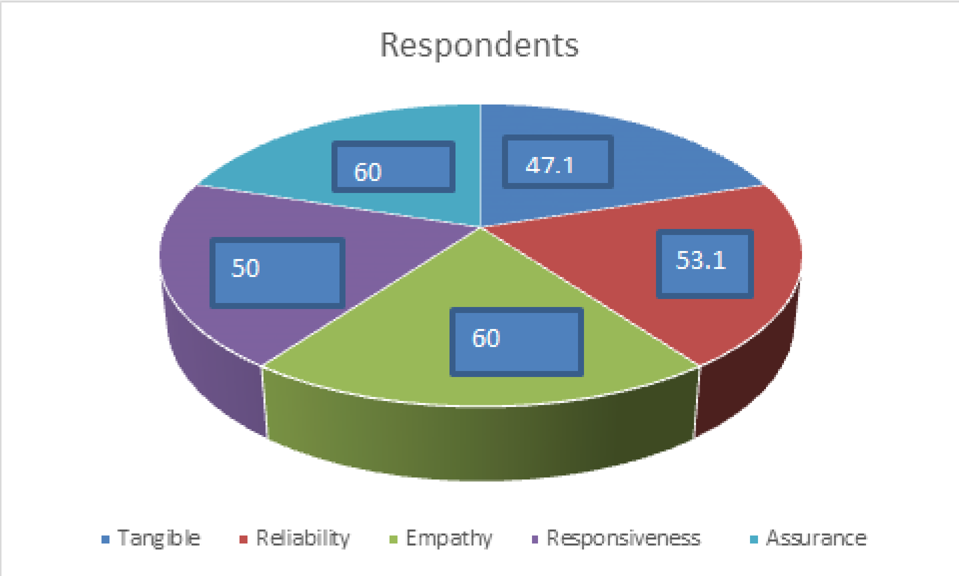


Fig-5 All Over Percentage Of satisfaction

Interpretation: From the table 11 and chart relives that all over satisfaction determinate makes more impact on banking services ,47.1 % of respondents are satisfied with tangible and 53.1% of respondents are satisfied Reliability and 60 % of respondents are more satisfied with the empathy dimension ,50% of respondents are average satisfied with the Responsiveness dimension and lastly 60% of respondents are very much satisfied with the Assurance . this shows the respondents are very satisfied with banking service quality.

MAJOR FINDINGS

1. Majority of Respondents are middle age (20 to 30) and (30 to 40) visits the banks frequently because in the pandemic conditions the old aged peoples are not coming to the banks frequently .
2. Majority of respondents are frequently have the usage of banking service every time in the month to get the aware of new service provided by the bank.
3. In all over satisfaction regarding the service quality provided by the bank the empathy and assurance determines have more impact on customer to take the services of the banker again and again. So , the banker should concentrate on the other determines to the retain the customers by improving service quality in tangible, responsiveness and reliability factors.

SUGGESTIONS

1. The bankers should collect the feedback from the regular customers to improve the services quality regarding in all aspect.

2. The banker should arrange awareness program to their customers about the product and services provided by the bank.
3. Specially in the case of women the banker should take necessary steps to make more awareness programmes and services particularly for them.
4. Most of the responded expressed that time taking while making any transactions due to lack of sufficient staff. So the bank manager should maintain sufficient staff to avoid this type of inconvenience to their customers.

RECOMMENDATIONS

Customers is asset to every organisation to make them satisfied regarding the services the banker should make more effort to provide quality services. there is need to study the service quality continually because the customer needs the variety of services according to the preferences and willingness. the researchers should take up the study especially in the area of depositary education among the customers.

CONCLUSIONS

Customer satisfaction has been one of the important elements of today's banking industry, always the customer wants best services from its bankers with which they have account. Because customer has different preference with needs, he will look for that who will perform the best services regarding services charging, maintains of proper accounts and understanding the customer needs.so, the bank should maintain the service according to the preference and meet the customer's expectation .in this present study it is clear that the respondents are very much satisfied with the service rendered by their banks in all aspect, but more and more awareness programmes should included in their action plan of implementation.

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AN EVALUATION OF NON-PERFORMING ASSETS IN INDIA

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ABSTRACT

Increasing non-performing assets (NPAs) in the Indian banking system is a major challenge. It is steadily increased over time. The main objectives of this study were to analyse the trend and composition of NPAs in India, the relative situation of NPAs in public, private, and foreign banks, and also examine the recoveries of NPAs through various channels in India. The findings showed that gross advances grew at 16.07 per cent of CAGR, whereas advances by private sector banks grew at 23.69 per cent of CAGR, and on the other hand, public (14.47 per cent) and foreign (12.63 per cent) bank advances grew less than the overall average. Similarly, the NPAs of private sector banks (29.58 per cent) are higher than gross NPAs (19.86), while public (19.24 per cent) and foreign (10.77 per cent) banks have a lower share. The findings also revealed that all recovery channels have also been less effective, as merely 12.17 per cent of recoveries have been made from 2012-13 to 2016-17.

Keywords: NPAs, Composition, Recovery channels.

INTRODUCTION

It is argued by economists that an efficient financial system allows a smooth flow of savings into investment, which positively boosts economic growth (Rajeev and Mahesh, 2010; King and Levine, 1993; Goldsmith, 1969). Similarly, Saini and Sindhu (2014) also argued that financial mobility plays a significant contribution to economic growth. The primary functions of financial institutions are to accept deposits and provide loans to their customers (Sushmitha and Nagaraja, 2020). But the fact is that when banks provide large amounts of loans, a challenge is also faced through the increasing non-performing assets (NPAs), whether in a developed or developing country. In a financial system, after some specific period (90 days or more), if the loan provided by the banks ceases to return to the bank, then it is known as an NPAs (Devender and Kirti, 2019). The burden of NPAs has not only demoted profitability but also spoiled the quality of banking facilities and put a strong challenge in front of the financial institutions for their survival (Narula and Singhla, 2014). NPAs are a major factor in the measurement of the performance of a bank (Kumari, Singh, and Sharma, 2017), and it does directly impact the profitability of a bank (Joseph and Prakash, 2014).

In the Indian economy, the banking system has been facing the problem of rising NPAs, which are increasing due to inward as well as outward factors (Kumari, Singh, and Sharma, 2017). **Prasad et al.** (2011) examined the issue of NPAs in the context of the Indian economy and argued that due to increasing NPAs, the rate of profitability in the banking sector has decreased. The Reserve Bank of India (RBI) suggested that banks should also focus on diversification of lending to reduce the stress of NPAs. Moreover, Rai (2012) argued that in India, NPAs are growing rapidly due to a lack of managerial and technical expertise. On the other hand, in the Indian economy, NPAs in the corporate sector have declined over the years and have increased in the retail sector (Castelino, 2005). Moreover, Singh (2016) observed that NPAs in public sector banks have increased while those in private sector banks have declined. **The Indian banking sector is presently facing a very huge amount of NPAs.** Due to the increasing burden of NPAs, the banks are forced to decline the rate of interest on deposits, which directly affects the customers. The increasing burden of NPAs negatively affects the cash reserve ratio (CRR) and liquidity ratio, due to which the shareholders lose confidence (Muthumeena, 2019). The Government of India (GOI) has taken many initiatives to tackle the stress of increasing NPAs in the banking system, such as implementing the Compromise Settlement Scheme, enacting Debt Recovery Tribunals, Securitization Act 2002, and forming a credit information bureau. In India, as per RBI, the NPAs have been categorised into the following four categories:

Standard Assets: A standard asset is a continuous performing asset for the banking system that provides timely returns. It has a normal risk and does not have an NPA in the real sense.

Sub-standard Assets: If the debts are not repaid within 12 months, as well as doubtful in nature, they are known as sub-standard assets.

Doubtful Assets: If the debts are not repaid for more than 1 year but less than 3 years, they are known as doubtful assets.

Loss Assets: All debts that are not covered by the bank are included in this category. In a real sense, this is actually an NPA for the banking system.

The main objectives of the present study are to analyse the trend and composition of NPAs in India, the relative situation of NPAs in public, private, and foreign banks, and also examine the recoveries of NPAs through various channels in India.

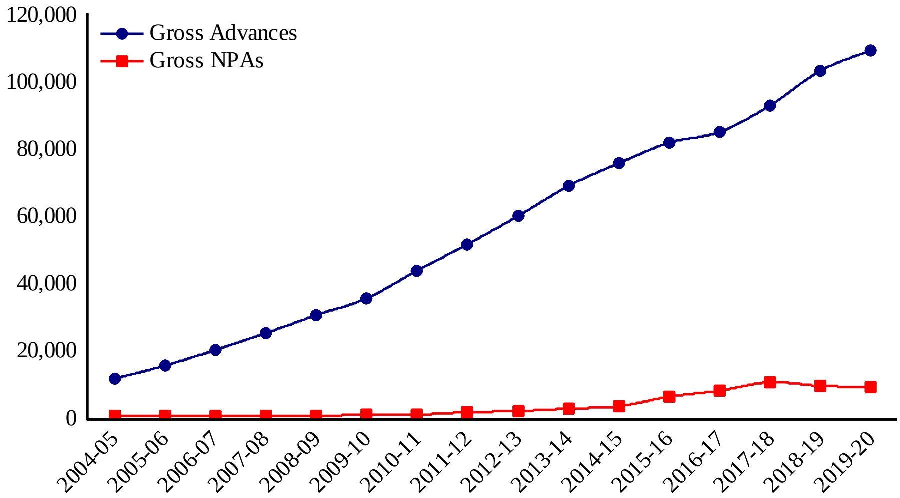
RESEARCH METHODOLOGY

To fulfil the study objectives, secondary data has been used in the study and collected from the handbook of statistics on the Indian economy, RBI. To compare NPAs in public, private, and foreign banks, the top three banks with the highest NPAs are included. The data has been analysed with the help of simple mathematical and statistical tools tables, figures, and compound annual growth rate (CAGR).

Trends and Pattern of NPAs in India:

The figure 1 depicts the distribution of gross advances over the period as well as simultaneously the gross amount of NPAs of scheduled commercial banks in India. In 2004-05, the banks provided an advance of Rs. 11,677 billion to the people, and at that time, the gross NPAs were merely Rs. 594 billion. It is clearly visible in the figure that the gross advances have increased steadily over the period, especially between 2009-10 and 2015-16, and again between 2017-18 and 2019-20. Similarly, gross NPAs have also increased in India, but it has increased rapidly after 2014-15. The CAGR of the gross advances during the period has been noticed at about 16.07 per cent, whereas in the case of NPAs, the CAGR is relatively much higher at 19.86 per cent.

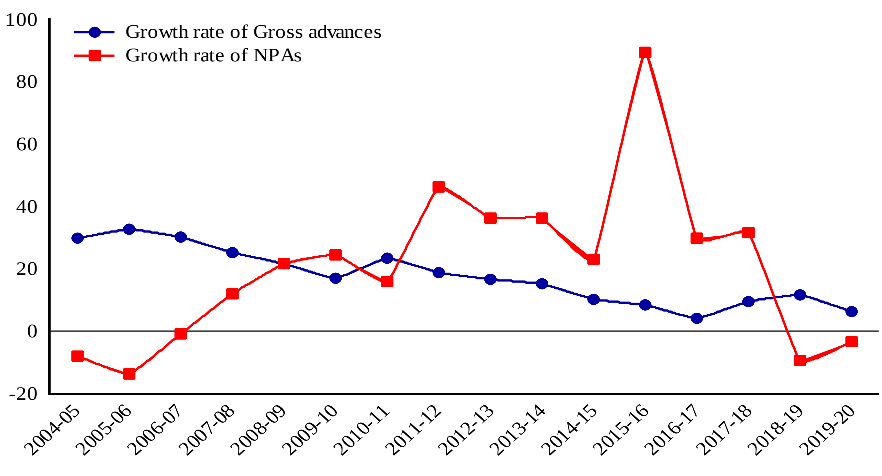
Figure 1: Trends of Gross Advances and NPAs in India (amount in Billion ₹)



Source: Data bank of Reserve Bank of India (RBI).

In the banking system of the Indian economy, the problem of increasing NPAs has been a serious concern for policymakers due to the fact that lenders have regularly failed to return their amounts to banks. As a result, the banking system has been unable to cope with the public demand for borrowing. Figure 2 demonstrates the yearly growth rate of gross advances provided by scheduled commercial banks as well as the growth of NPAs. An overview of the figure shows some facts regarding advances as well as NPAs. It is clear that from 2004-05 to 2009-10, the growth rate of advances decreased from 29.45 per cent to 16.70 per cent, whereas the growth rate of NPAs increased from 8.39 per cent to 23.96 per cent. Due to the worldwide financial crises during 2007–09, the private investment had declined overall in the economies. As a result, in the Indian economy, banks provided much higher advances in 2010–11, at Rs. 43, 575 billion, with a growth rate of 22.92 per cent, and then advances continued to fall until 2016–17, and after that increased marginally. On the other hand, the growth of NPAs has increased drastically and reached 89.26 per cent in 2016-17, and after that year, the growth of NPAs has declined from positive values to negative values.

Figure 2: Growth rate of Gross Advances and NPAs in India

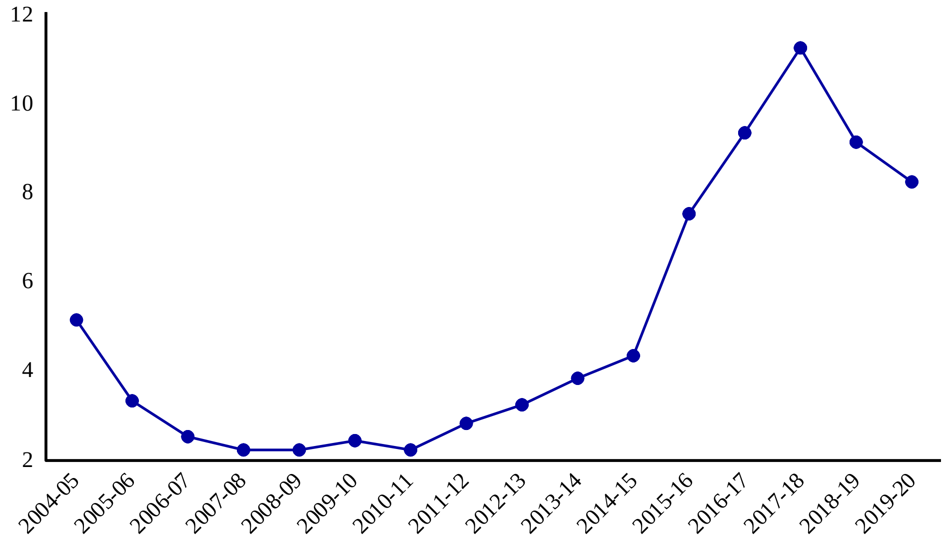


Source: Data bank of Reserve Bank of India (RBI).

 ISBN: 978-93-93810-00-7

Moreover, Figure 3 shows the NPA as a per cent of gross advances during the study period. In 2004-05, the NPA as a per cent of gross advances was 5.1 per cent, which has declined to 2.2 per cent in 2010-11. After that, the NPA as a per cent of advances has steadily increased to 11.2 per cent in 2017-18, and then it has declined marginally to 8.2 per cent in 2019-20.

Figure 3: Gross NPAs as per cent of Gross Advances of Schedule Commercial Bank in India



Source: Data bank of Reserve Bank of India (RBI).

Composition of Gross advances and NPAs in India:

Table 1 depicts the trends and composition of gross advances and NPAs in India. As previously stated, the gross advances were 11,677 billion rupees in 2004-05, with public sector banks accounting for 74.6 per cent of the gross advances, private sector banks accounting for 13.3 per cent, and foreign sector banks accounting for 6.3 per cent. It has been observed that, over the period, the ratio of public sector banks has declined from 74.6 per cent in 2004-05 to 60.6 per cent in 2019-20, the ratio of private sector banks has increased from 13.3 per cent in 2004-05 to 34.6 per cent in 2019-20, and the foreign sector banks reduced their advances accordingly. Moreover, in the case of NPAs, in 2004-05 the share of public sector banks in total NPA was 81.5 per cent, the share of private sector banks was 7.3 per cent, and the share of foreign sector banks was merely 3.3 per cent. It is found that, over the period, the share of the public sector, as well as foreign sector banks in NPAs, has reduced from 81.5 and 3.7 per cent in 2004-05 to 75.4 and 1.1 per cent in 2019-20, respectively. Whereas, the share of private sector banks has increased from 7.3 per cent in 2004-05 to 23.3 per cent in 2019-20. Furthermore, from the perusal of the findings, it is concluded that the CAGR of public sector banks in gross advances was 14.47 per cent and in NPAs it was 19.24 per cent; the CAGR of private sector banks in gross advances was 23.69 per cent and in NPAs it was 29.58 per cent; the CAGR of foreign sector banks in gross advances was 12.63 per cent and in NPAs it was 10.77 per cent. The result also shows that the CAGR of NPAs of public and private banks were more than the advances given by them, whereas the CAGR of NPAs of foreign banks were less than the loans given by them.

 ISBN: 978-93-93810-00-7

Table 1: Composition of Gross Advances and Gross NPAs in India

(Amount in Billion ₹)

Year	Gross Advances	Advances given by			Gross NPAs	NPAs of		
		PSB	PRSB	FSB		PSB	PRSB	FSB
2004-05	11677	8709	1556	732	594	484	43	22
2005-06	15457	11347	2325	959	511	414	41	19
2006-07	20074	14645	3253	1247	505	390	63	23
2007-08	25034	18191	4124	1607	563	405	104	29
2008-09	30376	22828	4547	1697	683	450	139	64
2009-10	35450	27335	4877	1674	847	599	140	71
2010-11	43575	33465	6245	1993	980	747	145	51
2011-12	51589	39427	7485	2347	1429	1178	145	63
2012-13	59883	45602	8860	2690	1941	1650	158	80
2013-14	68757	52159	13603	2996	2634	2273	245	116
2014-15	75598	56158	16073	3366	3233	2785	341	108
2015-16	81731	58239	19726	3766	6119	5400	562	158
2016-17	84926	58748	22667	3438	7918	6847	932	136
2017-18	92662	61417	27259	3633	10397	8956	1293	138
2018-19	102945	63825	34423	4069	9365	7395	1836	122
2019-20	109189	66151	37762	4361	8998	6783	2096	102
CAGR	**16.07**	**14.47**	**23.69**	**12.63**	**19.86**	**19.24**	**29.58**	**10.77**

Note: - PSB: Public Sector Banks; PRSB: Private Sector Banks; FSB: Foreign Sector Banks.

Source: Data bank of Reserve Bank of India (RBI).

Table 2 depicts the picture of the NPAs burden among the top three banks in each category, namely public, private, and foreign sector. In the case of public sector banks, the share of State Bank of India in gross NPAs was 26.3 per cent, which has declined to 16.6 per cent in 2019-20; the share of Punjab National Bank, as well as Bank of Baroda, has increased from 6.3 and 5.6 per cent in 2004-05 to 8.2 and 7.7 per cent in 2019-20, respectively. On the other hand, in the case of private sector banks, the share of gross NPAs of IDBI Bank Limited, as well as YES Bank Limited, has increased from 2.5 and 0.1 per cent in 2009-10 to 5.3 and 3.7 per cent, respectively, whereas the share of ICICI Bank Limited has declined marginally from 4.7 per cent in 2004-05 to 4.5 per cent in 2019-20. Moreover, in the case of foreign sector banks, the share of gross NPAs of Standard Chartered Bank, as well as Citibank N.A., has decreased from 0.9 and 0.6 per cent in 2004-05 to 0.6 and 0.1 per cent, respectively, whereas the share of Deutsche Bank AG has increased marginally from 0.0 per cent in 2004-05 to 0.2 per cent in 2019-20.

Table 2: Over the period the status NPAs of the Selected Banks in India

(Amount in Billion ₹)

	2004-05	2009-10	2014-15	2019-20
Public Sector Banks				
State Bank of India	156.2 (26.3)	235.3 (27.8)	735.1 (22.7)	1490.9 (16.6)
Punjab National Bank	37.4 (6.3)	2.1 (0.2)	256.9 (7.9)	734.8 (8.2)

Bank of Baroda	33.2 (5.6)	24 (2.8)	162.6 (5)	693.8 (7.7)
Private Sector Banks				
IDBI Bank Limited	-	21.3 (2.5)	126.8 (3.9)	472.7 (5.3)
ICICI Bank Limited	27.7 (4.7)	94.8 (11.2)	150.9 (4.7)	408.3 (4.5)
YES Bank Limited	-	0.6 (0.1)	3.1 (0.1)	328.8 (3.7)
Foreign Sector Banks				
Standard Chartered Bank	5.5 (0.9)	11 (1.3)	66.6 (2.1)	51.5 (0.6)
Deutsche Bank AG	0.1 (0.0)	2.6 (0.3)	1.2 (0.0)	15.1 (0.2)
Citibank N. A	3.7 (0.6)	12.8 (1.5)	7.8 (0.2)	9.6 (0.1)

Note: -Bracket contains NPA as percent of Gross NPA of a particular Bank.

Source: Data bank of Reserve Bank of India (RBI).

Recovery of NPAs in India:

Table 3 depicts the total amount recovered from NPAs through various channels in scheduled commercial banks. In the case of Lol Adalats, there were 8,40,691 cases referred in which a sum of Rs. 66 billion was involved. Out of the mentioned cases, 6.06 per cent of the money has been recovered through Lok Adalats. Whereas, in 2016-17, the involved cases reached 21,52,895 and the involved amounts have also increased to Rs. 1,058 billion, in which 3.59 per cent of the NPAs has been recovered. The Government of India (GOI) has established the Debts Recovery Tribunals (DRTs) in 1993 for better and efficiently recovery of non-performing assets (NPAs). In 2012-13, 13,408 cases were registered at DRTs involving an amount of Rs. 310 billion, of which merely 14.19 per cent of NPAs have been recovered. On the other hand, in 2016-17, the number of cases increased to 28,902 cases involving an amount of Rs. 671 billion, of which merely 24.44 per cent of the NPAs has been recovered. Moreover, the GOI enacted the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI) in 2002 to recover loan amounts from bad debts through auction of residential as well as commercial properties. In 2012-13, a total number of 10,44,636 cases were registered under this act. In these cases, a total of Rs. 1,057 billion was involved, and 22.04 per cent debts had recovered. In 2016-17, on the other hand, there were 22,61,873 cases, with a total amount involved of Rs. 2,860 billion, of which only 9.79 per cent was recovered. The perusal of the table shows that, 12.17 per cent of debts have been recovered over the period, with the SARFAESI Act recovering the most, followed by DRTs and Lok Adalats recovering 13.81, 12.96, and 4.11 per cent, respectively.

Table 3: Recovery of NPAs through various channels in India

(Amount in Billion ₹)

Recovery Channel	Years	No. of Cases Referred	Amount Involved	Amount Recovered*	Recovery in Percentage
Lok Adalats	2012-13	840691	66	4	6.06
	2013-14	1636957	232	14	6.03
	2014-15	2958313	310	10	3.23
	2015-16	4456634	720	32	4.44
	2016-17	2152895	1058	38	3.59
Total (1)		**12045490**	**2386**	**98**	**4.11**
DRTs	2012-13	13408	310	44	14.19
	2013-14	28258	553	53	9.58

	2014-15	22004	604	42	6.95
	2015-16	24537	693	64	9.24
	2016-17	28902	671	164	24.44
Total (2)		**117109**	**2831**	**367**	**12.96**
SARFAESI Act	2012-13	1044636	1057	233	22.04
	2013-14	1859922	1738	320	18.41
	2014-15	3155672	2482	308	12.41
	2015-16	4654753	2214	288	13.01
	2016-17	2261873	2860	280	9.79
Total (3)		**12976856**	**10351**	**1429**	**13.81**
Grand Total (1+2+3)		**25139455**	**15568**	**1894**	**12.17**

**Note: - ***The recovered amount in that year, which could be the present as well as the previous years.

Source: Data bank of Reserve Bank of India (RBI).

CONCLUSION AND SUGGESTIONS:

Growing NPAs in the banking system in the India is a serious concern in front of national policymakers due to its over-pressure. Therefore, the banking system is also failing to survive and provide debts at a lower rate of interest. Over the last few decades, there have been numerous hidden factors that have contributed to the increasing number of NPAs, i.e., the global financial crisis in 2008, misuse of borrowings, inappropriate allocation of loans, lack of documentation before providing loans, non-recovery of loans, trade cycles, and poor performance of DRTs, etc. As mentioned above, in the Indian economy, the problem of NPAs has spread drastically. In 2004-05, the NPA was merely Rs. 11,677 billion, which has increased to Rs. 1,09,189 billion with a CAGR of 16.07 per cent. One point here to be noted is that the NPAs have increased on one side in private sector banks (19.24 per cent) as compared to other banks, namely public and foreign banks. It is directly related to the profits of banks, which affect the Indian economy directly or indirectly. The Reserve Bank of India has taken various steps which have generally been disappointing due to their lack of effectiveness. The government should prepare a policy framework for providing loans and focus on strengthening the financial system or banking system through recapitalisation of banks, the creation of asset management companies, and providing incentives like tax breaks or exemptions from administrative fees. Moreover, there should also make evolution norms transparent. To address the problem of NPAs, the Central government and RBI should implement and effectively use the regulatory framework.

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 ISBN: 978-93-93810-00-7

WHY BANKS SHOULD BE CONCERNED ABOUT DIGITIZATION

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ABSTRACT

This chapter tries to address some of the challenges faced by the bank during a pandemic how the bank has handled the problem of new technology. The chapter also covers the recent trends in the banking sector and customer has to cope with the latest digital transformation in banking.

1. INTRODUCTION

The word 'digitalization' has been derived from the word digital, which means consisting of discrete values rather than a continuous scale Digitalization in banking implies the use of digital technology to handle transactions, customer interaction, information flow etc. in banks instead of traditional manual or paper-based processes Today people prefer online banking over physical channels for their financial transactions which are faster and more accurate. Also, they can complete repetitive tasks sitting at home through self-service kiosks located at bank branches or ATMs that help them save time and energy. Digitization can be considered an essential step towards building better customer relationships by understanding each other's needs and providing customized products and services. To remain competitive in the market, banks must develop new ways of doing business as market dynamics keep on changing rapidly from time to time. Digitization is necessary for them as it helps them not only adopt better technology but also improve efficiency and productivity by reducing operational costs, which contributes towards success and growth of a company and services through digital channels.

2. ROLE OF DIGITIZATION IN BANKING.

The banking industry's business operations have already begun to shift due to digital technology. Customers find it easy to compete in this digital area, but it remains a struggle for some banks, initially because of the coexistence. The banking industry's business operations have already begun to shift due to digital technology. Customers find it easy to compete in this digital world. Still, it remains a struggle for certain banks because of the cost of developing digital platforms. Second, a digital-only approach deprives them of a critical asset, namely the intense feeling of local identity they represent. The banking industry's business operations have already begun to shift due to digital technology.

Today, practically every bank considers digital transformation to be a significant priority. Technology and innovation investments are at an all-time high.

With deposit margins dwindling, making a profit is becoming more challenging.

With increasing competition and a shifting consumer mindset, Digitalization is no longer an option but rather a requirement equally, corporations and banks.

The rapid growth of digital platforms has given rise to new challenges in the financial services industry. Digital disruption, increasing customer expectations and their evolving needs are changing the face of the banking sector. This trend is causing banks to rethink their approach towards providing value to customers across different channels (including mobile apps). Due to several factors such as easy accessibility, low costs, and scalability, most customers prefer a digital medium for personal or business transactions. Banks have realized that they cannot ignore this growing preference among consumers and need to keep pace with digitization initiatives to build trust and convenience around core banking functions such as money transfer, online investment advisory etc. To meet these objectives efficiently, most leading banks have

 ISBN: 978-93-93810-00-7

introduced agile or flexible operating models that enable them to move swiftly and inject newer capabilities within the organization.

As part of the digitization process, banks need to upgrade legacy systems by implementing open APIs (application programming interface) or cloud-based platforms. This will improve efficiency and client experience resulting in high customer satisfaction rates while simultaneously increasing the competitive edge over other financial institutions. The banking industry has been witnessing a significant shift towards mobile apps, with customers preferring this channel for transacting via e-wallets and peer-to-peer money transfers instead of visiting brick and mortar branches. For banks to stay ahead of digital disruption, they need to focus on enhancing their core banking system, which is the backbone of all operations, including lending services, ATM management etc., building a robust digital platform, hiring tech-savvy staff and strengthening cybersecurity measures.

These initiatives need to be carried out with consideration of the safety and security concerns involved in handling sensitive data online. As cybercrime is on the rise, banks may now have to hedge their risks by investing more in their respective cybersecurity teams to ensure fool proof safety for customers' confidential information or face regulatory fines if hackers exploit any loopholes. For this reason, banks must be fully compliant with industry standards like PCI DSS (Payment Card Industry Data Security Standard) which includes regular reporting to ensure the smooth running of automated processes without compromising on the overall customer experience. All these changes planned by leading financial institutions will lead to a positive transformation for the banking sector.Digitalization has a high rate of change. The need to establish comprehensive plans for banks' technological modernization was determined by Russian banks' innovation processes. into critical business operations is a big deal. The emergence of new banking products has had an impact.

3. COVID 19 AND DIGITIZATION

As banks are working towards digitization, customer banking expectations have risen noticeably, which has been accelerated by the pandemic.

What has been the impact of COVID-19 on the digital agenda of banks?

There is a clear consensus amongst central bankers and international regulators that effective management of risks relating to financial stability, prudential soundness and ability to meet obligations as they fall due requires a robust domestic payments infrastructure. This includes ensuring that payment systems work as efficiently as possible. In addition to this, the objective should be to converge into an integrated market covering all African countries where particular attention would be given to those countries with large domestic markets.

In many ways, these principles have underpinned the international framework of cross-border payments since its establishment in 1989. The need for convergence of views on the payment infrastructure in central banking and regulatory communities was clearly expressed at COVID-19.In this regard, several key areas were identified by the Central Bank Governors as critical to achieving a successful implementation of a regional payment system:

Implementing a regional payment system would require intensive collaboration between central banks, commercial banks and critical infrastructure players. This needs to be expounded unambiguously through multi-lateral inter-central bank agreements.

A standard set of principles about the governance structure, risk management framework for financial stability, prudential soundness and ability to meet obligations as they fall due are required. Financial institutions such as Ecobank and Stanbic IBTC, in collaboration with telecoms companies such as Orange and MTN, have proven time and again that this is a blueprint for greater financial inclusion. The critical success factor consistent innovation

is supported by research highlighting significant opportunities emerging from the large unbanked populations across Africa and the heightened demand for these services, particularly for cross-border remittance payments. In addition to this, successful digital strategies exhibit sound integration into the broader business strategy. This means that allocation of resources must be linked to customer value propositions they offer instead of seeing digital as just an 'add-on' that can be easily substituted.All banking institutions' responsibility is to ensure they are not left behind by developing their digital strategies but instead adopt a market-driven approach that maximizes customer value propositions and their individual needs. This will give them long-term sustainability in Today's environment. Research from Japparova and Rupeika-Apoga (2017) stated that Customers can now perform their banking through customer service centres as an alternative channel. Electronic payment systems and other FinTech developments “The Case of Latvian Banking Business Models in the Digital Future “internet banking, mobile banking, callback, App, and other emerging technologies Customers' communication lines (Skype, WhatsApp, Norvik Chat) have been established. Latvian banks have been integrated.

Critical areas for digital success in banking.

The ability of financial institutions to provide efficient and cost-effective digital services is critical to their long term sustainability. Indeed many banks have begun exploring what this means for them and how they position themselves within the mainstream market. To meet these objectives successfully, three key steps need to be taken:

1) The first step is developing a strategy around customer engagement. This requires understanding changing consumer behaviour and finding ways to engage their customers more effectively. While the success of this approach is linked with customer retention, it also supports the acquisition and development of new client segments.

2) The second step is to understand how they must adapt their business models to integrate digital channels into their operations. This has become increasingly important for traditional financial institutions whose core values are founded on brick-and-mortar establishments. Both are accustoming themselves to utilizing technology and rethinking operational strategy.

3) Finally, diversity should be reflected in the product offering, ensuring that it meets the diverse needs of different groups, including low-income customers. Ultimately, by meeting customer demands, financial institutions improve existing services and open up new markets. They can create value for their products and services, strengthening the relationship between the company & consumers.

4. CHALLENGES IN DIGITAL BANKING

Digital banking difficulties are factors that hinder digital banking from stabilising and becoming a universal banking strategy for everyone.

The following are found to be challenging factors:

1. Safety and security

This is one of the most challenging as the banks has to protect it’s property against internet invaders.

2. A fully digital bank, a brick-and-mortar location, or both

Although many people are opting for digital banking again, a significant portion of the population remains sceptical.

3. A progression from traditional banking methods

Most banking systems use the COBOL programming language, which many people are unaware of. This has existed for almost 60 years and was not developed for today's technology.

4. A non-financial institution has already taken up residence in the space.

Several non-financial institutions offer services comparable to what is expected from digital banking today. Users of social networks such as Facebook can now donate money directly to another person's bank account because, unlike financial institutions, they are not bound by any rules.

5. Internal obstacles

To properly digitalize banking, both the financial sector and its workers must undergo a cultural transformation. Banks, unlike other businesses, have a unique departmental structure that has a substantial impact on the level of technology that may be applied.

6. Instead of digitalization, consider digitization.

Changing a bank's business model is impossible by simply updating the facade. Likewise, I do not believe that digitization can be replaced by digitization.

Many banks choose the less complicated path of digitizing existing business processes and surviving as a breakthrough.Those who push for a company's digitalization should first consider making procedures more efficient.

The extent to which the human aspect is removed from corporate operations can be used to measure efficiency.

5. ADVANTAGES OF DIGITIZATION IN BANKING

With more digital data available with banks, they can take data-driven dynamic decisions by using digital analytics. This benefits both customers and banks.

Technology is non-discriminatory. Everyone will be treated the same at banks.

The number of customers will be increased for banks because of the increased convenience of banking.

Opening and maintaining bank accounts are never this easier.

Repetitive tasks will save time and effort in future because this technology process automation which optimizes business. Customers' behaviour prediction to keep them engaged with relevant offers and fraud detection benefits. It will also help banks in giving faster and accurate responses.

Customers' convenience is ensured by a transparent banking process, improved services like online transactions and ATMs, smartphone apps that can be used for payments and receipts at merchant stores etc. Digitalization helps in building a relationship with customers by satisfying their preferences. This ensures the loyalty of customers for banks which ultimately results in profitability.

Digitalization reduces human error and provides increased security against possible database breaches. Fraudulent activity is minimized to reduce the loss of money due to scams and data thefts.

Customers can access their financial records anytime and anywhere they want, making keeping track of spending easy. This information is beneficial for planning projected expenses in future.

To ensure full bank staff involvement, digitalization is conducted in phases. With this, slow adopters are helped by advanced users to handle the changes. Implementation of new technologies is also eased with training provided to employees about how exactly it will be used in banking processes.

Digitalization reduces problems due to the accumulation of late payments, frauds or defaults on loans. Timely approval of loans increases business process efficiency leading to lesser risk and higher profitability for banks.

Digitalization helps in reducing processing time for faster response to customers' queries. Besides this, it also reduces the cost of doing business and simplifies business operations.

Customers' money is safe in their bank account, which gives them peace of mind. They can shop in any manner they like without carrying cash in physical form with them.

Banks can provide services like low-cost remittance overseas that too without delay because of digitization. Customers can save their time by using various online services provided by banks. Digitization eliminates the need for writing checks, thus lowering the production cost involved in making them.

It helps banks in achieving their goals by setting up objectives and targets. This, in turn, increases their profitability by maximizing return on investments. It also facilitates credit analysis enabling banks to take quick decisions while approving loans.

Digitization increases the safety of customers' data which is encrypted at various levels to prevent unauthorized access. This ensures privacy policy compliance, too, without compromising the security of data. With increased safety, customers are more willing to provide personal information, which banks can use for customized offers.

Digitalization helps streamline business processes, leading to fewer staff required to complete the same amount of work. This reduces operational cost and increases productivity Banks can hire skilled workers, which will increase revenue for them by providing better services to customers.

Banks make money by charging customers' interest on loans and also through other means like commissions and fees paid by customers when buying insurance policies or investing in mutual funds etc. With digitalization, banks save costs in printing paper statements, cheques etc., because all information is stored digitally. Besides this, bank staff spends less time as there are no repetitive tasks. This results in saving money because of less labour cost involved.

Banks can reduce management information systems costs by using software packages that are available at reasonable prices. With digitization, they need not invest a lot in adding new features or upgrading old ones to comply with changes in the regulatory environment. Also, the amount of manual work done is reduced, resulting in lesser expenditure for them.

With the increase in profits, banks will pay a dividend to their shareholders, which directly adds value to their shares, making them more valuable and saleable.

In Today's digital world, people prefer e-commerce transactions instead of going to stores. This will increase customer satisfaction leading to higher customer retention.

As business is becoming more and more competitive, companies need innovative ideas and approaches towards doing business that digitization provides them. Banks, too, can reduce the time taken in product development because of fewer processes involved.

Banks that use digital channels for providing services, like mobile banking, become easily accessible to customers who get their enquiries resolved quickly without making rounds of bank branches. Also, it helps banks to compare customer behaviour across various channels resulting in a better understanding of market dynamics.

In Today's highly competitive world, banks cannot afford to lag behind digitization. By not adopting digital practices for their businesses, they will lose customers and revenue, directly affecting their profitability. Digitalization also allows new companies to emerge in the market, offering more choices and better services at lower costs making it difficult for already established firms like banks to compete on the same level.

Therefore, banks must embrace digitization to improve the overall business process by leveraging the powerful tool available as analytics, which can help them make better decisions that will lead them into a path of success and prosperity over a more extended period.

Digital transactions are environment-friendly as it reduces paper usage, printing and transportation, which help in conserving natural resources. It also protects against counterfeiting by using chip-based cards and PINs for better security and reliability.

The number of customers will be increased for banks because of the increased convenience of banking. Customers who shy away from visiting bank branches due to travel time, long queues or any other reason can access their accounts or carry out financial transactions sitting at home through mobile phones, tablets etc. Thus, this results in customer satisfaction, leading to higher loyalty, which is essential for business growth. Also, it is easier to attract new customers by offering incentives through digital channels resulting in higher customer acquisition.

5.Disadvantages of digitization in banking

Several bank branches are falling, which result in the loss of jobs. This is because many people are moving towards online banking, which is more convenient, effortless and fast. Moreover, internet hackers can steal data from banks by breaking into their computer networks, making the banks more vulnerable to cyber-attacks.

With the increasing use of debit cards, credit cards etc., privacy may have to be compromised since everyone cannot hide crores of rupees in banks and act middle class.

6. CONCLUSION:

There are many issues associated with digital transformation. You may encounter problems such as lack of investment, competent staff and support at the highest level. However, as new technology emerges, banks will find it challenging to select the most secure technology. There is also a future scope of research in the problems of digital bank transformation.

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 ISBN: 978-93-93810-00-7

GREEN FINTECH: AN EFFICACIOUS WAY TO FINANCIAL SERVICES DURING THE FOURTH INDUSTRIAL REVOLUTION

Vibhuti Parashar and Dr. Monika Sharma

ABSTRACT

Sustainability is a common goal of the whole world today. Every society has acknowledged that degrading environmental health is a cause of concern. The industrialization of world economies has caused the putrefying conditions of the earth. Since the rise of the previous decade, industries and governments have been trying to innovate new ideas to mitigate the circumstances. To ameliorate the situation, they innovated and marketed sustainable goods, services, and technology.

Financial Services have existed even before the rise of industrialization and have been an integral part of the economy. So while aiming at a sustainable economy, it is crucial to have sustainable finance. Hence, in a world of sustainability, Sustainable Finance Technology has a paramount role to play.

This chapter seeks to find the meaning of various terms related to Sustainable Finance as well as the answer to the question of why Sustainable Finance is an efficacious way to redefine Financial Services.

1. INTRODUCTION

"The Fourth Industrial Revolution is not just about technology or business; it's about society."

~ by Joe Kaeser Chairman of the Supervisory Board, Siemens Energy.

"Suppose that climate change is not real and all we do is adopt green technologies, which our economy and our technology is perfectly capable of. Then all we've done is given our kids a cleaner world."

~by John McCain, Mark Salter (2004). "Why Courage Matters: The Way to a Braver Life", p.9, Random House

Since the advent of 21-century society has been transforming its focus from producing and consuming the goods and services that they want, to such goods and services which fulfill their wants as well as their environmental obligations. This evolution has been remodeled and is still innovating many different sectors of every industry. One of these sectors is Finance, which has been, is still, and will innovate for fulfilling human obligations towards nature, as this is the need of the hour.

In the previous three Industrial Revolutions, the environment and sustainability have been sacrificed for the needs and wants of the society, which effectuated various catastrophes in environmental health and sustainability. Deforestation, disparity of income and wealth, extinction of species, widespread pollution are some examples of environmental and sustainability issues. Many scholars have critically analyzed the negative impact of industrial growth at different times in history but these issues became prime concerns only in the previous decade.

These concerns have pioneered a new concept exquisitely known as Green Terminology. This terminology has invented a series of different words like Green Products, Green Marketing, Green Price, and many more. These days, the green term is also a way to attract and engage stakeholders and stand out from the competition.

 ISBN: 978-93-93810-00-7

Financial services are a prominent part of every industry. These services form a big part of the economy and include different stakeholders. The term Green Finance has emerged to cater to the environmental and sustainability goals as financial services hold a valuable place in creating an environmentally healthy and sustainable world.

What is the meaning of Green terminology, the fourth industrial revolution and financial services, sustainability, and other terms discussed? And how do they benefit various Interest Groups? This chapter gives an insight into the meaning of these terms and an analysis of how Green FinTech is an efficacious way to financial services during the Fourth Industrial Revolution in a sustainable way.

2. GREEN FINTECH: AN EFFICACIOUS WAY TO FINANCIAL SERVICES DURING THE FOURTH INDUSTRIAL REVOLUTION

What are Financial Services?

Services that assist in the decision-making process regarding management, lending, and investment of Montreal and other assets, are known as Financial Services. Credit Card Services provided by banks and other financial institutions, Mutual Fund Management Services provided by Individuals and Institutions are among a few examples of Financial Services provided by various individuals and groups.

The Main Function of these Services is to mobilize funds from individuals and groups having excess funds (Investors) to different groups and individuals who need funds (Investee) through Financial Instruments.

Let's understand this with an example; the banking industry is one of the most traditional forms of the Financial Services Industry. Banks receive money from individuals and groups as deposits and further invest these deposits as loans. Say Mr. A has deposited 10 cents in XYZ bank, and the bank has used 5 cents out of this deposit to give a loan to Mr. B on 10% per annum interest. Now, the bank will use part of this interest to pay Mr. A, say 4 percent per annum, and another part of the interest to finance the regular working and obligations of the bank. This example is a minute insight into the working of the banking industry. Although the functioning of banks does not restrict to a few cents, it spans billions and trillions.

Banking is just one form of Financial Services; there are many other forms of Financial Services like

- Advisory,
- Mutual Funds,
- Banking,
- Wealth Management,
- Insurance

The need for financial services are being satisfied by various individuals and groups like

- Investment Bank,
- Commercial Banks,
- CPA Firms,
- Brokerage Firms or Individual Brokers,
- and many others.

 ISBN: 978-93-93810-00-7

Financial Services cater to many other benefits to an economy like effective utilization of excessive funds, employment opportunities, enhanced liquidity in the financial system, e.t.c.

Along with the evolution of technology, the functioning of traditional financial services has evolved. The next subhead will elaborate on technological adaption in financial services.

What is FinTech?

Financial Technology or FinTech is the branch of technology used to obtain personalized financial services by various interest groups. For example, mobile banking through a bank's website or digital applications, trading in cryptocurrency, comparing insurance or loans through different websites through personalized requirements, and many other cases.

FinTech is a new-fashioned and less arduous way of financial services evolved with the help of software and app developers. It is both a compliment and a competition to the traditional financial system. Fintech existed, since the 1990s, despite this, its need was prompted in 2008 during the Global Financial Crises when people lost their faith in traditional banking systems.

Let's understand this with the help of the same example used in the previous sub-head say, Mr. A has deposited electronic money in his bank account by using the mobile application of XYZ bank, and Mr. B has applied for a Loan through the website of the bank. This involvement of technology in the traditional financial services and innovations using digital computing is Financial Technology.

Apart from online banking following are some different types of Financial Technologies:

- Insurance
- Personal Finance
- International fund transfer
- Equity Finance
- Online Trading
- Cryptocurrency

A few of widely recognized name of Fintech are VISA, Master Card, Paypal, Upstart, and Blockchain.

Financial Technology has been a creator of tons of unconventional ideas. It has benefited society by reducing costs and increasing the convenience, speed, security of financial services. In totality, Financial Technology has increased the efficiency and effect of Financial Services. This technology has escalated the use and knowledge of financial services to geographically backward areas and hence, helped in reducing disparities among societies.

Financial Technology has helped in reducing inequalities in society, increased economic growth so, it could be concluded that FinTech has increased sustainability, but what is the meaning of sustainability? The following sub-head discusses sustainability.

What is the meaning of Sustainability?

The term 'sustainable' means employing natural products in a way that does not degrade the environment, and the word 'development' means the process of becoming better. These terms, combinedly called Sustainable Development. Hence, sustainable development is the process of becoming better in such a way that does not degrade the environment.

"Sustainable development is the development that meets the needs of the present without compromising the needs of future generations to meet their own needs." ~ Brundtland (1987)

The definition acknowledged the existence of needs of both present and future. And emphasized the obligation of today's society to consider the needs of both present and future. According to this definition, each generation is accountable to its future generations for the legacy it passes down to them. Therefore, every association has the responsibility of judicially using natural resources. As most natural resources are perishable in nature, unjudicial use of such resources can lead to the depletion of these resources.

The United Nations is an international organization founded in 1945. It is a place where all the nations can get together, discuss common issues, and find shared solutions for human welfare. Currently, it consists of 193 Member States. The UN and its work are guided by the purposes and principles contained in its founding Charter.

The UN has progressed and is still evolving to keep pace with a rapidly changing world. From Agenda 21 (June 1992) to Paris Agreement (December 2015), it has gradually introduced different innovations in various fields for the betterment of society.

United Nations Member States in 2015 has adopted the 2030 Agenda for Sustainable Development, which provides a shared blueprint for peace and prosperity for people and the planet, now and into the future by all countries - developed and developing - in a global partnership. Its intrinsic are 17 Sustainable Development Goals (SDGs), which are an urgent call for action. These 17 SDGs by the UN are:

- **Goal 1**. End poverty in all its forms everywhere
- **Goal 2**. End hunger, achieve food security and improve nutrition and promote sustainable agriculture
- **Goal 3**. Ensure healthy lives and promote well-being for all at all ages
- **Goal 4**. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- **Goal 5**. Achieve gender equality and empower all women and girls
- **Goal 6**. Ensure availability and sustainable management of water and sanitation for all
- **Goal 7**. Ensure access to affordable, reliable, sustainable, and modern energy for all
- **Goal 8**. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all
- **Goal 9**. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
- **Goal 10**. Reduce inequality within and among countries
- **Goal 11**. Make cities and human settlements inclusive, safe, resilient, and sustainable
- **Goal 12**. Ensure sustainable consumption and production patterns
- **Goal 13**. Take urgent action to combat climate change and its impacts.
- **Goal 14**. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

- **Goal 15**. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss
- **Goal 16**. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels
- **Goal 17**. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

These goals aim to terminate poverty with other deprivations must go hand-in-hand and strategies that reduce inequality, improve health and education, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. These goals contribute as a preeminent cause for such immense admiration of green terminology. The next subhead discusses the meaning of green terminology.

What is the meaning of Green Terminology and Green FinTech?

The Green terminology in management includes all those products or services, which are comparatively less hazardous for the environment and human health than their substitute goods or services available in the market. Like cloth shopping bags is an example of green products, they are less hazardous for environmental health when compared to their substitute plastic bag.

The benefits of adopting green management in an organization span from the environment to the organization. The organization also enjoy certain benefits like:

- Improved brand image
- Technology Upgrades
- Reduced Energy
- Improved goodwill of the organization
- Fiscal benefits in some countries

By merging all the things we have learned till now, the meaning of Green Fintech seems quite clear. Green Fintech is Financial Technology used to obtain financial services that strive to enhance human and environmental conditions. It aims to promote innovation, sustainability, and transparency in financial services. Banks providing operating on renewable energy, going branchless and paperless; firms providing investment opportunities in the green project are some examples of Green FinTech.

A few categories of Green FinTech are :

- Green digital deposit and lending solutions
- Green digital asset solutions
- Green digital crowdfunding and syndication platforms
- Green digital risk analysis and insure-tech
- Green digital payment and account solutions
- Green digital investment solutions
- Digital ESG-data and -analytics solutions

Green FinTech is the need of the future as humans are trying to rectify the impact of its wicked actions. Since the dawn of the Industrial Revolution, In the conquest of development environment has been brutally harmed by society. In the next subhead, we will discuss the meaning of the Industrial Revolution.

What is Fourth Industrial Revolution?

The story of the First Industrial Revolution is not very antique; all of this started just 200 years back. Since then, there has been a rapid growth of industries and their revolution. There are Four Stages of the Industrial Revolution, these are:

FIRST STAGE: The first Industrial Revolution started from the end of the 18th Century to the beginning of the 19th Century. It was the first era when water and steam had used to mechanize production.

SECOND STAGE: The second Industrial Revolution started from the end of the 19th Century to the early 20th Century. This era is considered one of the most beneficial eras because of massive advancements done in industries using electric, gas, and oil energy to create mass production. Developments in communication methods, steel, and chemical synthesis are also huge advancements made during this period.

THIRD STAGE: The third Industrial Revolution began in the late 20th Century, coined as the Digital Revolution. In this period, production had automated with the help of electronics, information technology, and computers. In this era, new technologies were introduced in the field of space expeditions, biotechnology and research.

FOURTH STAGE: The Fourth Industrial Revolution is the present era. The term Fourth Industrial Revolution was given by Klaus Schwab, Founder and Executive Chairman of the World Economic Forum (WEF) in 2016.

This era focuses on taking digital technology to the next level. Today, transformation does not restrict to production. This revolution is bringing innovations in business models, workforce demands, communication, safety standards, environmental standards, and many other fields.

The Fourth Industrial Revolution Focuses on these topics:

- Evolution of education,
- To create a human-centered future,
- Sustainability,
- Technology-Driven Change,
- Talent attraction and engagement,
- Upskilling and reskilling,
- Changing the way of living,
- Strengthening supply networks during Covid Pandemic,
- and many more.

Hence, unlike previous Industrial Revolutions, the focus of the Fourth Industrial Revolution does not revolve around industrial development only. Instead, it focuses more on Sustainable Human Development.

How Green FinTech can be an Efficacious way Financial Services During Fourth Industrial Revolution?

During Fourth Industrial Revolution, Green FinTech can be efficacious as the adoption of Green Fintech can benefit the following:

1. Financial Service Providers
2. Investors or Consumers of Financial Services
3. Society, Economy, and Government
4. Environment

After opting for Green FinTech aforementioned individuals, and groups could be benefited in the following ways:

1. Financial Service Providers

The Financial Service providers are the organizations or firms which provide Financial Services. They will enjoy the following benefits by opting for Green FinTech:

- Improves Goodwill: Green FinTech is a widely popular name these days. The firms which follow ethics and are cautious about the consequences of their decision; tend to have a good reputation in society. This good reputation is also known as Goodwill. Hence, the organization's goodwill will increase after addressing and resolving environment-related topics.
- Fiscal Benefits: Many governments in different countries allow both domestic and foreign organizations exemptions and subsidies; based on the innovative and sustainable decisions the organizations make.
- Capital Efficiency: A few steps like credit investigation, resource matching can easily be reduced by using technology to bring transparency and accelerate value creation. The cost of transactions decreases, and operational efficiency increases with the help of technology. Therefore, technology brings capital efficiency.
- Market Expansion: Consumers are growing more cautious regarding their purchase decision. They keep an eye on the image and activities of the organization. The adoption of green technology increases the brand value of the products of an organization. The organizations can create a market in remote areas by providing quick and affordable loans to organic farming ventures or introducing mobile banking in linguistic languages.

2. Investors or Consumers of Financial Services

- Decision Making: In a market full of different goods and services green phrase can be an eye-catcher. While comparing services, it becomes easier for the customer and investors to choose. They feel their obligation towards sustainability.
- Affordability: As financial technology reduces various costs for the services providers, this reduces the price of services. The cost born by customers reduces with the help of technology. The use of websites for buying green bonds, stock trading, and mobile banking are affordable when compared to physically availing these services.
- Innovative Products: The increasing demand for Green FinTech is creating room for more new ideas. Service providers cater to these needs in the form of innovations. These innovations help by bringing variety and new technology to consumers and more investment opportunities for investors.

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- Efficient: Green Financial Technology offers high-quality products at lower prices to the customer. Thus, they are more efficient for customers than traditional Financial Services.\

3. Society, Economy, and Government

- Green Lifestyle: Green Fintech turns financial service into a green, low-carbon, and time-saving process. By decreased cost and increased efficiency, the poor can access financial services. This provides a green lifestyle to society.
- More Startups: The increasing demand for Green FinTech is creating room for more new ideas. Innovative ideas lead to new business plans called startups. Startups help an economy in many ways by providing employment opportunities, wealth creation, better GDP e.t.c.
- Improved Payment System: Cashless transaction helps in keeping a digital record of all the transaction done through mobile. It helps in keeping transparency in the payment system. More use of technology will bring more transparency to payment systems.
- Economic Growth: A economy with a transparent payment system, a big number of startups, less income disparity, and many other changes due to Green Financial Technology will boost the growth of an economy.

4. Environment

- Reduced Waste: The use of gadgets helps in reducing the potential waste and cost done to obtain traditional financial services. Like waste generated in the process of the physical banking system, can be reduced with the use of the mobile banking system.
- Renewable Energy: Green FinTech promotes investment in renewable energy in various forms like Green Bonds, Sustainable Investment Plans, e.t.c.
- Reduced Pollution: FinTech reduces various types of pollution by reducing the waste generated from the physical collection and processing of data. With the help of technology, the data can now be stored and processed without wasting many natural resources.
- Awareness: By offering Green Services FinTech creates awareness of degrading environmental health and issues related to sustainable development. FinTech provides the solution in the form of various green finance technology to tackle these issues.

As the Fourth Industrial Revolution focuses on the sustainable human development and the Green FinTechs are a innovative way to sustainably develop society with the help of technology. Green FinTech are Efficacious way to obtain Financial Services During Fourth Industrial Revolution

3. CONCLUSION

This chapter concludes that sustainability is a game-changer for organizations in the Fourth Industrial Revolution. Society is growing more thoughtful and worried about human and the environmental health. The awareness and work done by an organization for sustainable development will highly affect it's goodwill.

Hence, it is high time to adopt Green management and Green Technology for the environment and business. In such a scenario, the organizations can grow their market capitalization by adopting Sustainable Financial Services and consumer can make easily fulfill their obligations towards environment by opting for Sustainable Financial Services. Green FinTech can help society, organizations, and individuals by providing sustainable Financial Services.

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 ISBN: 978-93-93810-00-7

MOBILE BANKING-A GLOBAL ERA

Dr. Monika Sharma and Vibhuti Parashar

ABSTRACT

Mobile banking is a part of digital banking and has significant usage for everyone. Mobile banking in today's time a significant topic for researchers and widely popular all around the universe. In today's time, it's very cumbersome to manage without mobile banking. Mobile Banking- A Global era chapter highlights the perspective of banks for the fulfilment of client needs. It encompasses meaning, categories and its usage. It highlights various usage of Banking, its categories and different challenges associated with it. It also incorporates various ways of accessing mobile Banking and pros and cons associated with it. In the last section of this chapter 4 banks (HDFC, CBI, ICICI, and SBI) mobile banking usage services are specified and these Banks contribute significant portion in country's GDP. It includes references on the last page.

Key Words: Banking, Global, Mobile, Banks, Significant

MOBILE BANKING MEANING

It can be simply defined as act of generating financial transactions through tablet, smart phone, mobile phone, and laptop. The biggest significance of mobile banking is to bank anywhere at any time and biggest drawback is security concerns and restricted capabilities and becomes complex in fraud. Mobile devices allows customers to conduct financial transactions remotely by using software app provided by the financial institutions available on a 24 hours basis. Few other financial institutions impose restrictions on mobile accounts access transactions. Mobile devices are dependent on the availability of internet or data connection.

Categories of Mobile banking:

a) Account information access- Client can view account balances and statements through account information access and can request mini account statement, review term deposits, account history, loan statements, card detail, mutual funds statement, investment statement, equity statements and, insurance policies.

b) Transactions-Clients can transfer funds to institutions, self-accounts transfer, third parties payment and prepaid service providers.

c) Investments management service- Clients can manage their portfolios and can get real time view of investment portfolios.

d) Support Service- Client s can check status of loan credit, loan requests, credit facilities follow up card and loan requests.

e) Content news- Clients can obtain finance news and latest offers through banking institutions.

The usage of Mobile banking are:

1. To know account balances
2. To lists latest transactions
3. Electronic bill payments
4. Remote check deposits
5. P2P payments

6. Funds transfers between customers' accounts
7. Remote deposit option
8. Digital transmission
9. Mobile Payments remotely or at the point of sale

Mobile banking curtail transactions handling costs by reducing customer's visits to bank branches except cash transactions (deposits and with drawl). It is a very convenient activity in digital age.

Few concerns with mobile banking:

1. To establish a secure connection for logging
2. Compromising personal information

Mobile Banking and Cyber security

Cyber security is very essential in mobile banking operations as it helps to keep electronic information in private form and ensures misuse of data if any.

It encompasses cyber-attack. These are:

- 1. Backdoor attacks- It comprises the usage of alternate method of accessing a system by thieves through backdoors and result from an error.
- 2. Service attacks denial-It protects the user from accessing the system. Usually wrong password is shown with accounts locked information by thieves.
- 3. Direct access attack-The information access of computer system is gained by bugs and viruses which modify information also.

Challenges with Mobile Banking:

1. Reliability and Scalability
2. Personalization ability
3. Application distribution
4. Upgrade synchronization abilities
5. Security concerns
6. Accessibility based on the type of hand set being used
7. Client's frustration increases when app does not work well and even the best ones will encounter outages every now and then.
8. More features in app confuses clients
9. Clients are required to go to Bank branch to understand the demo but distances become barrier. Banks are still working to make their design more simple and attractive.

Ways to access Mobile Banking:

1. Mobile App- It is the most popular way of mobile banking which is dedicated to customers with features services on platform. Its usage are-

a. Balance checking

b. Payments and funds transfers between linked accounts

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c. Facility of card blockage in case of theft

d. Account activity alerts

e. Cheque book requests

2. SMS Banking- It is a versatile app when clients register their mobile numbers for SMS banking and get account information through SMS on request at designated number. It is suitable for customers not having smart phones and internet access.

3. Unstructured Supplementary Service Data- It is similar to SMS Banking which can be used without smart phone or internet access. You can check account information and mini-statement etc.

MOBILE BANKING CONS

Mobile Banking is a good option for Smart Phone users and convenient way to perform hassles free transactions. Clients are required to perform limited functions through mobile banking

MOBILE BANKING PROS

1. Banking at Fingertips- Customers can check account details and can do basic transactions through mobile phone.

2. Dedicated Customer Service- You can do easy fund transfers and block your cards in case of theft.

3. Bank Access 24*7- It includes-

- Planned maintenance updates
- Comfortable and easy option, possible from home
- Avoidance of pandemic-related health concerns

4. Optimizing your money-It includes

- Organization of digital money
- Spending alerts
- Information about daily cash withdrawal limits

5. Paying IOUs

- Easiness in payback with physical cash or IOU slip
- Funds transfer if you know customer routing and account number

6. Strengthening Security-

- Usage of login and strong password
- Security code for money transfers
- Multifactor authentication
- Face/ Fingerprint scanning (Biometrics for authentication)
- Location sharing help in spot

7. Providing added controls-

- Helps in depositing and money can be sent anywhere you wish

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- More advance controls
- Helpful in activation of new debit and credit cards
- Feature providing turning off mobile in case of stolen/missing.
- Clients can turn on their card without calling at 1-800.

6. Offering clarity of where your financial data is going

- Control tower features helps in recurring payments or whwn you are moving out of a city and no longer want to use this feature.
- Helpful in sharing bank data

7. Providing tailored options

- Facilitates Lower mortgage approval Rates and removes hassles associated with birth names and names on the card.
- Feature Daylight is partners with Visa to build digital brand focussed on the community's needs.
- Start-up Building mobile financial services initiated for Black community, young adults, women and other groups

Mobile Apps

Few available Mobile Apps are-

1. Chase- It provides few basic feature which are as follows-

- It helps in sending money and monitor your account.
- It highlights daily spending and saving patterns on a non-ledger interface.

2. Chime- It provides few basic feature which are as follows

- It provides daily bank alerts to customers
- It allows clients to block your card in-app
- It allows overdraft facility to the customers without any fees.

HDFC Mobile Banking provides few features-

a. Net Banking
b. Credit card net banking+
c. Email Statements
d. Loan account online
e. Cardless Cash

Central Bank of India (CBI) Mobile banking Features-

Pre login

a. List of nearby Branch ATMs
b. Contact details of Admin Offices
c. Interest rate for time deposits

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d. Account Balance service at missed call
e. Real time alerts/modification about new schemes
f. Frequently asked questions and complaints options
g. Fast tag application
h. Videos demo
i. Deposit calculator
j. Products offered to customers
k. Insurance application
l. Virtual assistance for cent mobile application

Post Login Features

a. Account Balances/ Mini statements
b. Utility bill payments/ biometric login functionality
c. Scheduled funds transfer
d. Loan and TDS certificates
e. PDF download and email transactions
f. Add and delete beneficiaries
g. Repeat past payments and MMID generation
h. Registration and enquiry of positive pay system (PPS)
i. Nomination facility
j. Debit and Credit card control
k. IMPS or NEFT enquiry
l. Donation for institutions
m. Request for blocking f ATM debit and Credit card.
n. DTH and Mobile Recharge
o. Open and close time of deposit account

ICICI Mobile Banking provides few features-

a. Safe and Secure Banking
b. Bank account access conveniently
c. Payment of telephone, electricity and other utility bills
d. Many exciting offers and discounts
e. SMS Banking (It doesn't require smart phone) and National Unified USSD platform (NUUP)).
f. I Mobile Pay

g. Pockets by ICICI Bank-It is like a wallet which offers you a virtual place to clients to store their money for various transactions such as mobile bill payment, recharge and sending money and gifts.

h. Mobile money

i. DMRC Metro card recharge- This feature is available in Delhi, NCR regions through m-rupee outlets of MMPl.

j. Call to pay- A simple call enables clients for utility bills payments, recharge mabile or DTH connection.

k. Dial*99# (NUUP) - It provides National Unified USSD Platform (NUUP), through which account balance can be accessed by entering IFSC code. It doesn't require internet connection.

SBI Mobile Banking provides few features-

- **A. Payments/Transfer-**
- Funds Transfer
- Intra-Bank Transfer
- RTGS/NEFT,
- Credit Card, VISA
- IMPS Payments
- NRI eZ Trade Funds Transfer
- **B. E – Deposits-**
- E-TDR/e-STDR
- E-TDR/e-STDR under Income Tax Savings Scheme
- SBI Flexi Deposit
- E-Annuity Deposit Scheme
- E- Recurring Deposits
- **C. Smart Cards-**
- Gift Card
- Smart Pay-out Card
- State Bank eZ Pay Card
- State Bank Achiever Card
- State Bank Virtual Card
- VISA Foreign Travel Card
- MasterCard Foreign Travel Card State Bank Collect
- Bill Payments
- NPS Contribution

- Power Jyoti Fee Collection (PUL)
- Loan against Shares

CONCLUSION

This chapter concludes the widely available features of Mobile Banking with its pros and cons. The services features of Mobile banking are countless and few banks are embedded with pre login and post login features. Mobile Banking encompasses mobile apps include several features. Mobile Banking is full of numerous usage thus it not a term it a widely popular easily accessible application for billions of people.

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A CONCEPTUAL STUDY: ETHICAL CONSIDERATIONS OF ARTIFICIAL INTELLIGENCE IN BANKING

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1. ABSTRACT

Technological advancements and progress has accelerated enormously with the introduction of Artificial Intelligence. AI technology is taking the heights all over; it has become inevitable element and center of attention in the rapid growing digital and information era revolution. To quote simply AI is just smart machines, computers or robots system which can actually act, behave and work like humans. Foundation of this unimaginable innovation is Algorithms- group and path of rules that a computer has to follow in order to reach to a conclusion or desired results. Artificial intelligence has entered in numerous disciplines, businesses and industries. Banking and finance industries are one of the biggest beneficiaries of AI applications and implementations. Banking operations have been experiencing the acceptance and specific uses of AI at a slower pace for few years, but in recent scenario AI technology is being hugely adopted and used by banks for an upgraded range of banking applications and services. Banks are encountering the rapid increase in development & investments of AI applications resulting in greater customer satisfaction and better management. Banks are sitting on the piles of the greatest data sets and AI is making access into these data sets tremendously, making it useful and efficiently processing without human interference, as consequences the banking operations relying more on machines decisions rather than human decisions. The ultimate goal of Artificial Intelligence is to make machines behave and act more like human beings in a super intelligent way, here the question of morality quotient comes into the frame and the ethics of machines comes in. What would be the ethical acceptability criteria of Artificial Intelligence tech while taking crucial decisions? What is the actual morality quotient of AI? So this paper depicts a picture of ethical issues relating to artificial intelligence and focuses on the morality quotient of AI while processing and implementing AI application into banking organizations. AI techniques are deployed & developed in banks hugely starting from the customer satisfaction to the back office operations, stating this it becomes critical to decide the ethical behavior of AI otherwise serious negative repercussions human society will experience.

Key Words: Artificial Intelligence, Technology, ethical, morality Quotient, Banking.

2. OBJECTIVES- The main objectives of the papers are as below –

1. To explore and provide information about the context of ethical aspect of AI.
2. To highlight the areas and role of Artificial Intelligence in banking practices
3. To study the ethical considerations of Artificial Intelligence and their implication in Banking operations & practices.
4. To understand the challenge confronting ethical aspects of AI.

3. INTRODUCTION-

3.1 Concept of Machine Ethics – The concept of AI ethics lies at the foundation of machine ethics. Machine ethics can be defined as the behavior of machines towards their users, which is ethically accepted. It is the area of research linked with designing the artificial moral robots, computers & agents that behave morally by following some standardized ethical characteristics. The core of machines ethics lies in following the set of ethics and principles itself. The area of machine ethics is so crucial because it decides the future behavior of AI also to protect unethical behavior. It also envisages fear of human beings for getting the machines independent that could take autonomous decisions unethically.

3.2 Understanding ethics of Artificial Intelligence – Artificial Intelligence is defined as the ability of a computer, robots or machine reacting in cognitive manner alike human brains & interacting, learning, speaking, perceiving and behaving with the external environment, solving problems with advance technologies while working on algorithms- a set of rules or principles essential for AI technology. The ethical aspect of AI is related to the machine ethics and ethics of technology. This is concerned with the moral and ethical behavior of human beings while designing, framing and creating algorithms for the artificial machines. Main considerations regarding AI ethics are – privacy, fairness, being unbiased, transparency & accountability. And the ultimate goal of AI ethics is to make machines or computers behave ethically while taking decision and reaching to conclusions simultaneously having creativity, innovations and developments in the respective fields. Now the question arises- What is the ethical and moral quotient & human values of persons who are creating these algorithms for artificial machines because the same outcome is expecting out of machines. Who is responsible for ethical behavior patterns of machines-one who is collecting, one who is maintaining, or the one who is developing?

3.3 Role of Artificial Intelligence & Relevance of AI ethics in Banking- The adoption of AI in banking industries has gone up at peak in last few years at the same time the role of ethical behavior of AI have become so critical in this financial sector. As resultant the development is apparent in growth and data availability of banking businesses. AI technology is already being applied in majority of the functions of banks. The technology has immense scope in performing some major task like fraud detection facility, risk management task, digitization, automation, customer satisfaction and management, security and privacy & wealth management services. Performing these entire tasks AI is bringing huge benefits to banks in terms of processing, speed, profitability and customer value addition. AI supports various customized and tailored approaches in banking services and operations, providing transformation and strengths to this industry widely. Rapid technological developments, up to date digitalization waves and dynamic banking operations are replacing human interference day by day with Artificial intelligence applications to a very great extent in trading, investments, lending and management practices consequently relying more on machine decisions then that of human decisions. But how reliable and ethical these machine decisions stand in banking businesses? Are these AI based ethical decisions fulfilling the criteria of human based ethical decisions, taking same level of morality while deciding on these trading, investing and managing decision? How can we assure this? At these hierarchical management decisions the ethical aspects of AI becomes substantial. For Algorithm based applications & AI technology meeting high ethical standards are not new but it should match the human ethical standards which is a very new challenge to overcome, every time when there is change and modification in data.

 ISBN: 978-93-93810-00-7

The reviewed papers revealed that a few retail banks have adopted the technologies of AI - like Chabot to respond customers' queries, robotics, voice assistants and fraud protecting services. Some of the ethical decisions which banks experience are - treating customer fairly by being unbiased, to save the interest of customers from financial frauds-security, up skilling the present roles & responsibility of employees and employer-accountability, meeting the market integrity & competition, better results in terms of profit and processing- Transparency. Some of the ethical AI issues related to banking operations are as below-

A. **Quality of Data**- the core strength as well as dependency of AI lies in data-Algorithms. The key consideration in banking operations are the information they contain for their customers, their investment and trading purpose. When the data sets are accurate, whole representative and unbiased, results derived out of these data sets would be true or vice a versa. If chosen wrongly, the repercussions could be negative for both customers as well as banking operations.

B. **Designing and Implementation of Data/ Accountability**- How AI banking applications are being designed & the team who is responsible for creating these banking data driven algorithms. They might be different in their moral or ethical values, they might lack appropriate training or they could have personal biasness. The task becomes substantial when these AI based applications have to deal with direct clients relationships and services. For instance when a Chatbot responds to financial advises & queries of customers which is based on the access to the data provided by them. Significance is being increased when there is apparent change and modifications in provided information. Generally the banking organizations take the responsibility of algorithms model and designing of AI applications. Here the question arises what would be the effects on decisions if customers get able to have changes and modifications in algorithms.

C. **Fairness and Unbiased** – ensuring fairness and ignoring biasness become inevitable especially while managing data that belongs to customer management and banking relations, replacing the unfair decisions and non representative data with ethical consideration is expected out of AI applications. As condition demands goodness and badness can be argued by each individual at different point of time, so standardized fair criteria must be followed in banking operations.

D. **Transparency & Interpretability**- for ensuring the availability of information and fair result, transparency is required. How AI algorithms work, what data processes take place, how speedy the decisions come up. Acknowledging this ends up in enhancing customer's trust in banking businesses. Interpretability stands for the ability to explain technical decisions & process of AI. These AI based banking and investment decisions should be understood and explained by humans else it could lead to information asymmetry. Albeit, adherence to the above stated ethical aspects surely don't give the expected result without being getting unethical decisions but to a great extent applying these considerations can surely turn into better customer experiences, developments & improvements in banking AI applications, data protection & security, fraud flagging services, improved cyber security as well as prevention of risks.

4. RESEARCH METHODOLOGY-

The paper is based on systematic review of literature. Qualitative study including concept & literature review.

4.1 Research Design & Data Collection- Secondary data sources are being used to have the insight about ethical issue of AI in banking operations. Published research papers, website articles and online research platforms like SSRN, Elsevier, and Research gates are being used.

4.2 Review Process- The review process of searching, screening, selecting & studying is being followed. Total 20 Articles and 10 research papers were searched. After the screening phase, on the basis of abstract reviews 15 articles and 7 papers were selected. All the research papers and articles were studied and reviewed in depth. Afterwards based on the observations of all the papers, suggestion and conclusions are stated.

5. FINDINGS-

On the basis of extensive review of papers and articles it was found that AI has huge potential to transform the banking & financial markets. AI is already having positive impacts in banking operations and undoubtedly is it going to have long lasting future imprints in the banking industry, so evolving role & responsibility comes along with great accountability as well and that is where ethics are to be abide by machine decisions to ensure better results and acceptability on customer's ends. It is found in studies that individuals engaged in for AI application decision should fulfill the criteria of being ethical & moral on their part. Control over technology by standardized set of rules while producing outcomes, embedding of human ethics & values that could correspond with ethics at AI ends & data security can also be taken into light while discussing about AI ethical implications. But as every coin has two side, ethical considerations of AI in banking business come up with great risk and challenges, because it falls in two categories simultaneously, first is ethics abide by human-philosophical set of beliefs & second Decisions driven by AI perspective-embedded machine ethics. How ethics can be computed and how to make a machine unlearn something once the data is stored and algorithms are set. The ethical aspect of AI comes into dilemma at this point. What about if artificial intelligence reaches to the decisions which are not ethically accepted, then what kind of penalties and legislation could be there? Who could hold responsible for the losses and damage that AI brings into for employers, employees & of customers? What if data is being leaked by AI tech? These question mark statements are unanswered in the reviewed papers; they also exist as great challenges & problems for AI principles. It was found in studies that privacy aspects has the first priority by banking organization which is followed by transparency and explain ability, accountability, security & so on. Well ethics differ according to culture, geography, language, organizational culture & governance, so ultimately it becomes hard to standardize a set of ethics for the overall AI technique.

6. CONTRIBUTION-

The study justified itself with the current phenomena and ongoing trend of Artificial Intelligence & The relevance of the paper can be of great significance for the technical & machine ethics experts, AI system personnel in banking operations, banking organizations and employees, researchers and academicians who want to have the knowledge & understanding of artificial intelligence's moral & ethical implications in banking field also get to know the implementations of these AI applications in financial sector. The paper may serve the purpose to adherence of the ethical considerations by AI machines in banking decisions & operations. Researchers who look forward to explore & study the goodness & ethics criteria of artificial intelligence in bank's decisions and management will likely find content, themes, issues and discussions regarding same. This study shall be an important & helpful source of material in the field of Artificial Intelligence.

7. SUGGESTIONS & CONCLUSION-

Banking institutions adopting AI tech & applications must ascertain a framework and limit that can secure and protect the privacy of customers while ethically justifying the decisions made by AI. A continuous real time monitoring should be done by banking institutions on the results and outcomes reached by AI applications so as to ensure better improvements and modifications required in future. At the same time banks must stick to laws, rules & regulations. Innumerable benefits of AI are still unexplored in financial markets and banking sector. Data protection & data exchange policy should be adopted by banks to save the interest and privacy of their customers also to bring transparency in their operations & practices. Strict legislations must be followed in case of discrepancies found in AI decisions. Banking institutions should come up with the collaboration & training programme for their employees, associated with AI & Data science institutions so as to have better results & understanding of technology. All the application technology must follow the audit and regulatory requirement once in a year along with establishing an AI review board that can continuously watch on ethical issues and decisions. It doesn't matter that at what level ethical adherence of AI application move to, the value system and ethics that a human brain can follow in any circumstances, can never be imitated by Artificial Intelligence.

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UNIFIED PAYMENT INTERFACE (UPI)- INDIA'S NEXT TRANSFORMATION…

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ABSTRACT:
As India realizes its dream of going cashless, we see the beginnings of a new technology, Unified Payments Interface, which enables individuals to use their smartphones as Virtual debit card to do instant marketing. In the new era of mobile and smartphone technology, one of the most useful innovation technologies is the introduction of electronic wallets or digital payment systems. Use of the Nationwide Unified Payments Interface (UPI) has increased 70-fold over the past four years. During the launch on 11/04/2016, Governor Dr Raghuram G Rajan, if RBI declares that India has the most user-friendly public payment infrastructure in the world, operating 24 /7 without No digital wallet or credit or debit card required. Paying online just got a whole lot easier. NPCI (National Payment Corporation of India) and IBA (Indian Bank Association) launched UPI with support from RBI. This is an enhanced version of IMPS (instant payment service). UPI is a digital mode that helps you transfer money from one bank to another without using your account number, bank name, account type or IFSC. India has taken a step further towards a cashless economy with the launch of the Unified Payments Interface (UPI) by National Payments Corporation of India (NPCI). At the end, this paper can conclude that UPI is one of many inventions of the financial industry that will help customers. By 2023, 60 billion UPI platform companies are expected to account for more than 50% of India's digital revenue.

KEY WORDS: Unified Payment Interface, Bank, Network, Payment, UPI ID, Digital Payment

INTRODUCTION:
Indian society has undergone various waves of economic structural change - from a period of class parity to a period in which the lower classes faced increased barriers to entry. participate in the formal economy. Today, the economic scope in India is quite remarkable. For example, Oxfam's survey found that the richest 1% of the population controls 50% of the country's wealth, while only 1% of wealth is in the hands of the poorest 50%. An economic scope like this is only seen in another country in the world, South Africa.
To better show the disparity in social class, India lists the top 5 countries in terms of the maximum number of billionaires as well as the greatest number of people living in poverty. Considering the above information, the Indian people's access to new and innovative payment infrastructures is seen as a shift to encourage the participation of all economic classes in the country.

Thanks to the Indian government's involvement in developing new payment platforms and outstanding skill in implementing these initiatives, the geographies appear to be evolving towards infrastructure. technically improved, in favour of reducing financial barriers for the poor. And make digital income technology more inclusive.

THE CONTEMPORARY LANDSCAPE OF INDIA'S PAYMENT NETWORK:
Over the past few years, the mobile payment infrastructure has made tremendous advances in terms of availability and importance over non-digital forms of currency. This is mainly because smartphones are growing across the Indian market and it is easier for companies to present digital payment options as customers move to electronic exchanges. The ease of keeping assets

in a mobile wallet adds enormous convenience to cash transactions that may require frequent ATMs. From the commodity trading system to the use of money, humanity has come a long way. We are now in a digital age where everything is at your fingertips, the internet has made our lives easier than ever, from online food collection to accounts. One-click spending, digital payments have played an important role. We are all used to earning apps like PhonePe, Google Pay, Paytm etc. These apps have become an important aspect of our lives. Transactions on these apps are done by UPI. The Unified Payments Interface is a single payment interface designed by the National Payment Corporation of India (NPCI).

WHAT IS UPI PAYMENT?

As India realizes its dream of going cashless, we see the beginnings of a new technology, Unified Payments Interface, which enables individuals to use their smartphones as Virtual debit card to do instant marketing. UPI was established in 2016 and can be considered as a necessary card for financial transactions. Using IMPS (Instant Payments Service), UPI allows you to send and receive money using a unique identifier known as a Virtual Payment Address (VPA). This reduces the annoyance of having a debit or credit card or business details like bank account numbers or IFSC bank codes. UPI enables instant transfers between accounts 24 /7 through a single UPI app. This is in contrast to a regular bank transfer that has a waiting period to add a new payee. In the new era of mobile and smartphone technology, one of the most useful innovation technologies is the introduction of electronic wallets or digital payment systems. India has taken a step towards becoming a cashless economy with the launch of the Unified Payments Interface (UPI). With this new payment method, a revolution has been made in the Indian banking system. During the launch on 11/04 /2016, Governor Dr Raghuram G Rajan, if RBI declares that India has the most user-friendly public payment infrastructure in the world, operating 24 /7 without No digital wallet or credit or debit card required. Paying online just got a whole lot easier. NPCI (National Payment Corporation of India) and IBA (Indian Bank Association) launched UPI with support from RBI. This is an enhanced version of IMPS (Instant Payment Service)

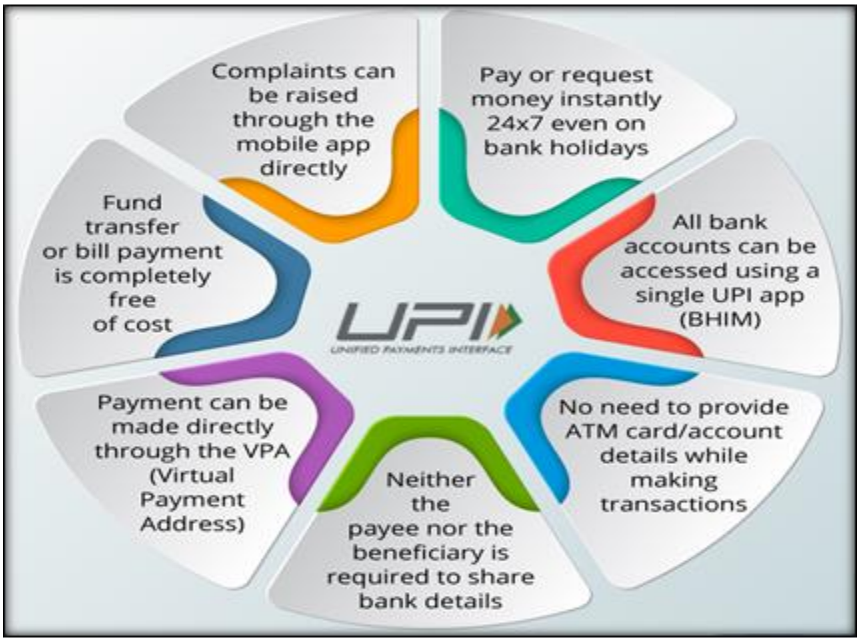

Fig.1.1 Concept of UPI

(https://www.paisabazaar.com/upi/)

According to a report by the State Bank of India (SBI), the use of the Unified Payments Interface (UPI) across the country has increased 70 times over the past four years. The State Bank of India's Economic Research Department Special Research Report - A Guide to Formalizing the Economy since Fiscal Year 18 indicates that there were 3.5 billion transactions worth 6.3 thousand billion USD was registered via UPI in October 2021, an increase of 100% while the transaction value increased by nearly 103% compared to October 2020.

“UPI has become the number one country in the world for digital transactions in a very short period of time. In just seven years, digital transactions in India have increased 19-fold. Today, our banking system operates 24 hours, 7 days and 12 months anytime, anywhere in the country,” the Prime Minister said at the launch of two customer-centric RBIs with good judgment.

HOW DOES UPI WORKS?:

UPI is a digital mode that helps you transfer money from one bank to another without using your account number, bank name, account type or IFSC. To use UPI to transfer money, you must have the following information:

1. Bank account
2. Active mobile phone number (linked to your bank account)
3. Smartphone
4. Internet Connection

Once you have these in place, the next thing you need to do is sign up for UPI and build on top of mPIN.HOW TO REGISTER ON UPI AND GENERATE MPIN?

After successful registration and creation on mPIN, you are ready to use UPI. To send or receive money using UPI, you need a mobile app based on UPI, e.g., BHIM UPI, BHIM SBI Pay, etc. In essence, UPI transfers funds from the sender's bank account to the recipient's bank account without revealing the bank details to any party involved in the transaction. Money transfers can be made 24 hours a day, 7 days a week, regardless of the bank's opening hours. The UPI can be used in three ways,

namely:

1. By entering the UPI ID (or Virtual Billing Address, VPA) of the sender/recipient
2. By scanning the QR code UPI
3. By entering the recipient's account number and IFSC code

Fig.1.2 Registration Process t of UPI

(https://www.paisabazaar.com/upi/upi-registration/)

HOW TO GENERATE UPI PIN?

- Select the bank account in the app from which you want to make transactions.
- Once you have selected the bank account, it will be prompted to generate your PIN
- OTP will be sent to the phone number your registered mobile with bank account
- Enter this OTP to generate your UPI PIN.
- Generate your -digit UPI PIN, which will be required to make all transactions.

6 IMPORTANT THINGS TO REMEMBER WHEN MAKING UPI PAYMENTS:

1. Restrict Screen Sharing or Recording Apps
2. Verify the Registered Name on The UPI ID
3. Stay alert on Unverified Links or Fake Calls
4. Prefer UPI ID Over Phone Number When Doing Remote Transactions
5. Avoid Using Multiple UPI Apps
6. Keep the UPI App Updated
7. UPI Transaction Limit

TYPES OF TRANSACTIONS THAT CAN BE PERFORMED USING UPI:

1. Remittance: UPI can be used to send or receive money from your friends or relatives at a single click.
2. Bill Payments: From electricity bill to mobile bills, you can pay any bill using UPI.
3. Merchant transactions: You can pay for your online orders on Amazon, Myntra, Zomato or any other e-commerce site.

UPI PAYMENT APP:

UPI, expanded as Unified Payments Interface, is gaining popularity and is becoming one of the most preferred methods of digital transaction in India. There are many apps that provide users this facility and apart from this, many banks have tied up with UPI and customers can use this platform through bank apps as well. UPI is being offered by many chat platforms and mobile wallets in the market.

- **Apps with UPI Features in India:**

1. **PhonePe**: This is one of the most popular payment applications that allows users to make transactions using the UPI interface. This is considered one of the best apps for UPI. The app was launched in 2015 and is powered by Yes Bank.

2. **Paytm**: The mobile wallet app company has also partnered with UPI support to provide customers with easier money handling and repositioning. Consumers can count coins in their Paytm wallet using UPI ID. With other payment alternatives like debit/credit cards, online banking, etc. UPI is also one of them. Customers can also create collection requests through Paytm with UPI. After Sender Receives Payment. Paytm Payment Bank Paytm Payment Bank will now possess the Unified Payments Interface (UPI) system as one of its features. The facility will soon be launched for all account holder after testing and fixing bugs. The feature is possible to be made public in the next few weeks. Paytm Payment Bank UPI will allow consumer to share funds with a UPI ID to all vendors or account holders without any hassle, at the click of a button. The interest rate shown by the payments bank is around %.

3. **BHIM Application**: BHIM (Bharat Interface for Money) application has been developed by National Payment Corporation of India (NPCI). This application is known for its simplicity. It also exposes a very secure interface. The payment interface has all the necessary qualities and is known for its good user experience. Money transfer can be done through VPA, QR code or bank account number and IFSC code. MobiKwik These networks of facilities in India have also joined the UPI interface. All Mobikwik customers can use UPI to top up their wallets. They have provided various services like debit/credit card transfers, online banking, cash withdrawal and cash deposit. The e-wallet service provider has also established relationships with various e-commerce retailers.

4. **Google Pay** Launched by the tech giant Google, GPAY is another app that offers customers the ability to use UPI.

5. **Uber:** Uber has now included UPI as one of its payment methods. You can pay for your Uber rides with this interface.

6. **SBI Pay** This is the application of State Bank of India (SBI) specially designed for UPI application. It is easy to use and allows you to easily document the benefits of downloading apps.

7. **Axis Pay** Axis Bank is one of the other banks that has launched a UPI compatible platform for its customers. It comes with a very user-friendly interface and many other features.

8. **BOB UPI** The BOB UPI application has been released by Bank of Baroda and is available for download from the Google Play Store.

One of the advantages of this application is that it provides customers with some other features that other UPI applications do not have. About 52 banks nationwide have cooperated with UPI

 ISBN: 978-93-93810-00-7

to provide services to customers. While most banks have designed their own UPI application into their existing mobile applications, others do not have UPI, while some have partnered with third parties to provide clients with access to UPI. The UPI interface changes the way digital profits are made in the country. There are a number of UPI applications on the market, and more and more such applications are being introduced. Another important point to be aware of is that you can use any UPI application to link your bank account. Therefore, all UPI applications can interact with each other. For example, customers can use or join a Yes Bank account on the ICICI Pockets app.

HOW TO FIND UPI ID?

To find a UPI ID, you need to track the actions noted down:

- Go to Google Pay app
- Tap on your photo in the top right section
- Tap on the bank account
- Tap the bank account whose UPI ID you want to view
- You will find the associated UPI ID under 'Manage UPI Ids section'.

HOW TO RESET UPI PIN?

In cash you forgot UPI PIN, pursue the measures cited below to rest UPI PIN:

- Go to Google Pay App
- Tap on your photo in the top right section
- Tap on the bank account under payment methods
- Tap on the bank account you want to edit
- Tap on the 'Forgot UPI Pin' option
- Enter the last 6 digits of your debit card and expiry date (MM/YY)
- You can create a new UPI ID
- An SMS will be sent on your registered Mobile number for OTP authentication.

UPI CHARGES FOR TRANSACTIONS:

As one of the best performing payment systems in digital India, UPI is now compatible with most of India's banks and e-wallets like Google Pay, PhonePe, Paytm, BHIM UPI etc. An important question, however, is whether there is a UPI. transaction fees or not. UPI transactions are free so far, but recent news reports suggest that some banks may set a very low amount for UPI transactions. Other payment sources like IMPS, NEFT, etc., are also subject to special fees for different transaction volumes. In February 2020, NPCI also eliminated Payment Service Provider (PSP) fees for all UPI peer-to-peer (P2M) customer transactions in the country until further notice.

Expected Cost of UPI Transactions

- Banks like Axis, HDFC, Kotak Mahindra providing UPI services will soon charge users for P2P (peer to peer) transactions after the first 20 transactions.
- Rupees 2.5 will be charged for transactions less than or equal to Rs. 1000 Rs. 5 will be charged for transactions greater than Rs 1000.

- Goods and Services Tax (GST) 18% will also be charged for these transactions Compared to other payment methods offered by RBI, UPI fees are actually much lower and pocket-friendly for most everyone.

IMPORTANT THINGS TO KNOW ABOUT UPI:

We guide to UPI as a smart phone-friendly application. Here are some interesting items that you should know concerning this payment interface that delivers it an advantage over others.

- In this expense gateway, you can communicate allocations between 2 banks operating your smartphone
- Users must to construct a VPA- Virtual Payment Address or command and link their bank accounts to it. This is basically like a monetary address for them.
- Just as you send an SMS, you can now transmit or receive funds from one budget to another.
- You can benefit the usefulness of this app all-round the day. Even when RBI is completed.
- This is a boon as you do not need to transact within banking hours anymore. This is feasible as this App is based on IMPS (Immediate Payment Service) that functions 24x7.
- The existing cap of transactions on this app is 1,00,000 subjects to terms and conditions. This is under retribution nowadays and soon the cap might be increased. Many of the banks have their inner caps also.

BENEFITS OF UPI FOR CUSTOMERS:

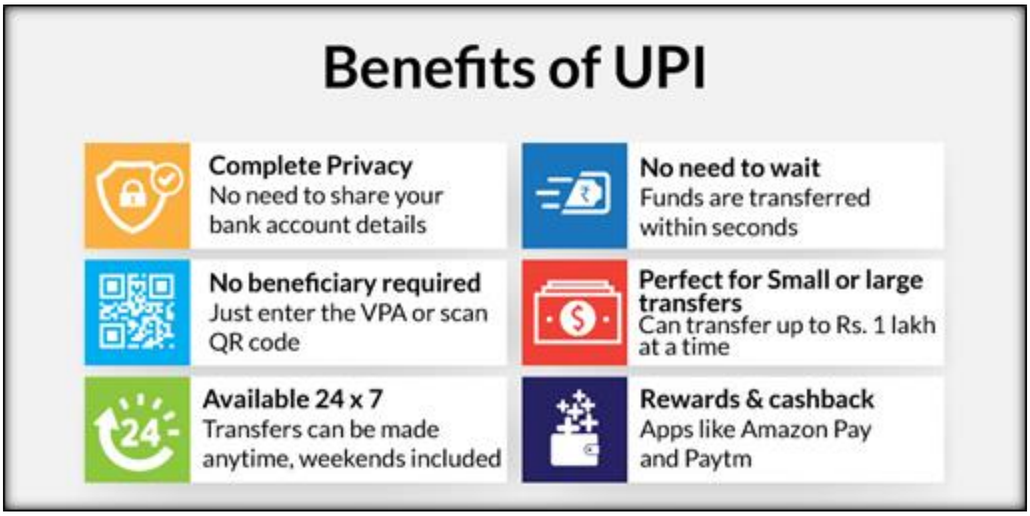

Fig.1.3 Benefits of UPI

(https://www.paisabazaar.com/upi/upi-registration/)

IMPACT OF UPI ON PAYMENTS INDUSTRY:

According to EY data, UPI-based digital transaction has increased 110% in volume and 109% in value between June 2020 and June 2021 if current trends persist. In the following years, UPI's help to the entire digital payments industry of the country will grow significantly.

SECURITY IN UPI:

- In India, two factor authentication is required to enable any digital transaction.

- Two-factor authentication means that one-factor is required in order to establish a person's authentic identity and second entry is the password known only to the user.
- UPI uses a unique one clicks two factor authentication system whereby users can authenticate both authentication factor with a single click.
- The fingerprint of the mobile device is used as the first element of authentication and to establish the authentic identity of the user.

UNIFIED PAYMENT INTERFACE (UPI)- INDIA'S NEXT TRANSFORMATION……..

India has taken a step further towards a cashless economy with the launch of the Unified Payments Interface (UPI) by National Payments Corporation of India (NPCI). Reserve Bank of India Governor Raghuram Rajan said UPI is one of many inventions of the financial industry that will help customers.

By 2023, 60 billion UPI platform companies are expected to account for more than 50% of India's digital revenue.

CONCLUSION:

This paper analyses Unified Payment Interface (UPI), a new age payment system presented in India by the National Payment Corporation of India. Unified Payment Interface is a mobile-centric, real-time interbank payment system that has the potential to transform and universalize digital payments in India. UPI is a substantial improvement as corresponded to the extant amount system in terms of cost, ease of use for customers, payment times, and safety and has noticed exemplary user adoption. UPI can assist obtain a a large part of the population within the ambit of the digital economy and can be a excellent instrument for economic inclusion in India.

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QUALITY OF WORKLIFE AND ITS IMPACT ON JOB SATISFACTION IN BANKING SECTOR– A COMPARATIVE STUDY

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INTRODUCTION

The service sector, like banks, has gone through an underlying change in the course of recent many years, due to which an ocean change could be seen in the job and duties of bankers combined with pressure and stress. Bank representatives face the most significant work stress in executing on-time service to achieve management goals and to ensure customer satisfaction. Expanded utilization of advanced technology, internet bank exchanges, expanded financial propensities for clients, economic changes, Government and R.B.I.s rules and controls, etc., intensified the issue of representatives' work pressure causing the declined nature of work life. The banking house offers a broad scope of financial products and services to corporate firms and retail clients through various conveyance channels and its specific subsidiaries and members in speculation banking, life, and non-life insurance investment and resources the board separated from the usual financial business. Bank workers have been dealing with incalculable issues in effectively conveying the variety of these items and services to clients. The challenges have additionally disturbed with inferior Quality of work life. Banking hours were expanded to encourage the satisfaction of clients' expectations. In the quickly changing financial climate, the bank representatives' duty broadened further and more than the other corporate workers. The bank representatives who manage cash/account-related items are presented with higher anxiety feelings in the changing workplace. It hurts the representatives' physical and mental wellbeing, bringing about bad Quality of work life. The two businesses and representatives are presently perceiving and valuing the meaning of the nature of work-life in associations.

Nature of Quality of work-life is fundamental to banking business execution. It focuses on two destinations - (I) to improve productivity and (ii) build the fulfillment level of satisfaction of customers. Quality of work life is the nature of the connection among employees and their complete workspace with human measurements added to services' arrangement. Bank workers anticipate a few money-related and non-financial advantages from the bank. Thus, an endeavor is made to contemplate the Quality of bank representatives' work-life considering current real factors.

In the Quality of work-life, personal satisfaction portrays an individual's or group standard of living, general wellbeing, security, and general environmental factors. Conversely, the work-life rate includes things that influence their prosperity, like compensation and advantages. Quality of work life is progressively a critical piece of the complete benefits bundle. The survey on the nature of work-life concerning the banking area, especially of a between sectoral approach, is sparse and not satisfactory to show up at important derivations. The current examination is an endeavor on Q.W.L. in the organized public and private sector banks. It perceives the different elements associated with work-life, work fulfillment, and worker execution in the financial area.

QUALITY OF WORKLIFE

Q.W.L is concerned with making the employee's service time pleasant, giving them sufficient wages and salaries so that his family life may become comfortable. He is given due importance in the organization that his sense of self-respect and pride are satisfied. Now the employees are not happy with their present job or work environment. He must, of course, get fair wages. Besides, he wants that his workplace is free from troubles. There is enough light and ventilation, there is enough space for moving around, and he gets defect-free equipment and machines. He wants to work with such coworkers with whom he enjoys doing work. He wishes that he should also be consulted, or at least he should have some say in the decisions that management takes affecting his job. The decisions about his overtime work or about his transfer should be so accepted that his family life is not disturbed. This is, in short, the concept of Q.W.L. It is not simply increasing wages and salaries. It is something more than that. It is much more than labor welfare activities prescribed by labor laws. It includes everything that makes his working lifeless tiresome, less boring. It provides job rotation, job enrichment, and the participation of employees in management, and it is concerned with forming semi-autonomous workgroups. It includes the concept of democracy.

ELEMENTS OR CONSTITUENTS OF QUALITY OF WORK LIFE

Various authors differ in their opinions about what constitutes Q.W.L. Some feel that improving working conditions leads to better working life, while others feel that fair wages and job security are essential elements of Q.W.L. One well-known author Shri Richard Walton has identified the following aspects that constitute Q.W.L.

Adequate and Fair Remuneration: Fair remuneration means wages that are satisfactory looking to the efforts involved. It will be based on the result of job evaluation, the company's ability to pay wage rates prevailing in the market—demand of talent and skills, etc. It is confident that the wages paid to them must be enough for employees to live without stress in the modem world.

Safe and healthy working conditions: The work environment must be free from risks or other factors harmful to the employees' health and safety. Walton has specially emphasized reasonable hours of work, zero-risk physical conditions of work, and age restrictions in this connection. Of course, provisions for safety measures are included in India in the Factories Act. But Q.W.L. implies something more than these minimum provisions of labour laws.

Opportunity to use and develop human capacities: The work today has become repetitive and cheerless. The worker simply works on the machine without much interest. The Q.W.L. demands a variety of jobs, which require a more comprehensive range of skills and abilities. The concepts of job rotation. Job enlargement and job enrichment have developed out of these needs.

Opportunity for continued growth: Here, the emphasis is not on the job but career opportunities. The employee is interested in personal development from which he will be able to derive job satisfaction. Hence it is essential that career guidance must be provided to him, information about job opportunities in the company must be given to hint-and training and education for advancement must be arranged for him

Social integration in the Work Organization: It is necessary for improving Q.W.L. that the employee must have an identity with the organization and develop a feeling of self-esteem. This purpose needs to create a sense of belonging and team spirit in the employees. There must be an atmosphere where everybody has an equal opportunity to progress, no discrimination based on caste, creed, sex, or religion. There must be social integration among employees.

Constitutionalisation in the work organization: Even employees must get equal rights as per the organization's constitution. He must have all rights which every citizen~of a nation gets under the body. They must be guaranteed the right to personal privacy, free speech, equal treatment, and governance by the rule of law.

Work and the total living space: The Q.W.L. demands that the employee's life outside the organization and his family live must not be affected adversely. Working for late hours, frequent travels, quick transfers, etc., are costly both psychologically and socially. The workers will perform under stress. These must be avoided.

Work-life's social relevance: If the company does not fulfill its social obligations and indulges in activities that harm society, the employees would feel ashamed of working in the company. E.g., lack of waste disposal, pollution, low-quality product, undesirable marketing practices, and employment practices all will affect employees' self-esteem. The Q.W.L. demands that the company remains away from them and fulfills its social responsibility.

Broadly speaking, the above eight criteria constitute Q.W.L. But it is possible that all of them may not be relevant for certain employees because the concept of Q.W.L. is the result of satisfaction or dissatisfaction of employees themselves. Hence what is Q.W.L. is finally defined by the worker himself.

JOB SATISFACTION (J.S.)

J.S. is one of the significant variables that have drawn the firm's attention and academicians. Considering rising rivalry because of globalization, directors have put incredible significance on job satisfaction. This might be because of numerous investigations' discoveries that work fulfillment is a massive determinant of authoritative responsibility. Delighted employees will apply additional efforts and act positively to the viability and proficiency of their organization. Job Satisfaction will prompt better execution, and the workers will be more dedicated to their organization. Consequently, the theoretical concept of the framework is presented to have a clear understanding of Job Satisfaction.

NEED OF THE STUDY:

The work environment for employee wellbeing serves as a foundation for a climate for service. Therefore if employees perceive an organization as offering the right work environment in return for their contribution to an organization, then it is likely that employees will report higher levels of performance, trust, and commitment. As banking mirrors the economy, the banks' top managers affirm that their employees are the most valuable asset. Low Q.W.L. may affect the Quality of services and organizational commitment of the employees. Better Q.W.L. can lead to greater self-esteem and job satisfaction. Nowadays, Q.W.L. is considered a critical factor in encouraging employees to work. The study is of utmost significance as it studies a much-discussed topic in Human Resource Management, i.e., Quality of Work Life and Organizational Commitment, and that too about the banking industry's backbone. It is intended to understand and compare the Quality of Work-life (Q.W.L.) and its impact on job satisfaction towards the organizational commitment of selected Public sector banks and Private sector banks in A.P. The research work is confined to understanding the respondents' perception of different factors of Q.W.L., Trust of the employees towards their bank, their level of satisfaction, commitment to goals.

Public sector banks, Private sector banks, through the employees' perception and its impact on the employees' commitment, shall help the authorities take adequate steps to improve Q.W.L. and exploit its benefits. This study attempts to provide such an understanding.

IMPORTANCE OF THE STUDY:

This study will give a clear picture of work-life Quality and its impact on public and private banks' job satisfaction. It says whether the Quality of work-life bank employees is better or not, whether they are satisfied with the job. It also draws attention to the problems faced by the employees in their work. It may help the banks to improve employee performance. Providing Quality at work not only reduces attrition but also helps in reduced absenteeism and improved job satisfaction. Not only does Q.W.L. contribute to a company's ability to recruit quality people, but also it enhances a banks' competitiveness. On the academic side, this study contributes to the organizational behavior and human resources management literature by systematically examining the influence of Quality of work life on employees' job satisfaction and performance in the banks context. Overall, the current study findings will provide tentative support to the proposition that Quality of work-life should be recognized as a significant antecedent for employees' job satisfaction and performance in the banking sector. This study, therefore, submits that bank management and their managers can benefit from the implications of these findings. Given that empirical evidence has consistently shown that it is more expensive to hire a new employee than to retain one, bank management and their managers must promote the Quality of work-life for their employees to keep them satisfied with their jobs and committed to their jobs.

STATEMENT OF THE PROBLEM

For banks, too, like any other organization, people, processes, and systems are essential ingredients for growth and development. Just as the methods and techniques are fine-tuned to meet the organization's specific needs, the people or the human resources also need continuous motivation, counseling, skilling, reskilling, and other human resource development interventions so that they can be kept abreast to meet the goals of the organization. Apart from the traditional banking functions, the bank employees are nowadays performing a plethora of tasks making their work more intensive and dense. Work plays a pivotal role in the life of an employee who is engaged in productive work. It has a significant impact on (a) shaping the personality of the employee (b) determining their performance(c) commitment to fellow members (d) commitment to the organization and the society. The enriched and enlarged jobs and multiple roles accentuate the necessity of a good Quality of Work Life (Q.W.L.) in the banking environment to keep the employees contented and happy. Q.W.L. is a technique that enhances the functioning of organizations by humanizing the workforce, making it more democratic by involving employees in the decision-making process. Q.W.L. is the reaction of an individual to work or the personal consequences of the work experience. The worker himself ultimately defines the Quality of work life. Organizational commitment is a highly relevant topic when organizations are searching for means to increase employee retention and performance. Organizational commitment has been studied in research to understand its relation to employee turnover, intention to quit, job performance, etc. Organizational commitment is the employee's willingness to maintain membership with an organization due to the interest and association with the organization's goals and values. It is found that Q.W.L. has a significant effect on job satisfaction and will impact organizational commitment. The present study attempts to understand and compare the Q.W.L. of selected Public sector and Private sector banks in A.P. and the effect Q.W.L. has on employees' satisfaction and the employees' trust towards the organization and their commitment. The present study mainly focuses on the Quality of work-life in the selected banking units of Andhra Pradesh. A model or relationship between Quality of work-life and its impact on the employee's job satisfaction in banking chosen units will be studied. Here mutual comparison of selected variables between banks is also made.

SCOPE OF THE STUDY:

The Present research work will be done in selected bank units of Andhra Pradesh State. The survey will be conducted among employees working in public and private sector banks. The study area will be four major cities of A.P. From the four major cities in Andhra Pradesh, one private and the public bank will be selected at convenience by the researcher.

THE OBJECTIVES OF THE STUDY:

1. To identify the factors of Q.W.L. of employees in selected banks
2. To know the variables that impact job satisfaction of employees of selected banks
3. To develop a model or relationship between Q.W.L. and Sex, Age, and banks
4. To find the relationship between job satisfaction and Sex, Age and banks
5. To correlate Q.W.L. and job satisfaction between private and public banks.

RESEARCH INSTRUMENT:

The research instrument comprises a well-structured questionnaire prepared to elicit the required data from the respondents to keep in view the study's objectives and scope. The data so collected is the respondents' perception of the Quality of work-life, Job Satisfaction, Trust, and Commitment of the respondents, forming the core of this thesis. To assess the respondents' agreement to the factors undertaken for study, responses were collected on a five-point scale. The questionnaire will be finalized after discussion with different experts, including an expert in Applied Statistics, and a pilot study will be undertaken to test the validity and reliability of the content.

THE POPULATION

The study population consists of the employees of Public Sector Banks and Private sector banks in A.P.

PILOT STUDY

A pilot study will be done to ensure the questionnaire's reliability that will be prepared from collecting data from the respondents, who comprise public sector and private sector banks. A pilot Study will be done among 100 bank employees. In pursuance of the pilot study, reliability analysis will be undertaken with Cronbach's Alpha. The reliability analysis process will start with all statements considered for the questionnaire and later on sequentially eliminating such statements whose elimination improved the alpha value. Those statements with an alpha value less than 0.5 Chronbach Alpha will be deleted through the reliability analysis.

THE HYPOTHESIS OF THE STUDY:

1. There is no significant difference between factors of Q.W.L. in selected banks.
2. There is no significant difference between variables that impact job satisfaction of employees of selected banks
3. There is no significant relationship between Q.W.L. and Sex, Age group, and banking units.
4. There is no significant relationship between job satisfaction and sex, age group, and baking units.
5. There is no significant correlation between Q.W.L. and job satisfaction among banking units.

 ISBN: 978-93-93810-00-7

RESEARCH METHODOLOGY:

Item	Description
Research Design	Descriptive & Analytical Research
Geographical Area	Andhra Pradesh four major cities
Type of Population	Bank employees
Population source	A.P. Private and Public Banks
Sample unit	Employees working in public and private banks in A.P.
Sample method	Purposive sampling (Non-Probabilistic)
Sample size	From each city – one public and one private bank will be selected at convenient, and from each bank, 50 employees will be the respondents. Thus, Sample size = 50 * 8 Banks = 400 samples
Sample plan	Public sector banks: 200 and Private sector banks: 200
Source of data	Primary and Secondary
Source of Primary data	Responses will be captured from Private and Public sector bank employees through a structured questionnaire and interview technique will be used.
Source of Secondary data	They will be collected from various previous articles, journals & other published studies preceding 10 years.
Nature of Questionnaire	Q.W.L. and Job Satisfaction questionnaire with suitable scaling will be used.
Type of questions	Itemized ranking and five-points Likert scale
Testing of validity	Polit test will be conducted to check the content, criterion validity of the questionnaire.
Testing of Reliability	Cronbach alpha will be used
Statistical tools	Will use suitable tools such as Correlation, ANOVA, T-test, Regression, and factor analysis will be used.

VARIABLE UNDERTAKEN FOR THE STUDY:

S.no	Variables	No. of Statements
1	Satisfactory and Fair Compensation	8
2	Protected and Healthy Working Conditions	9
3	Freedom to Use and Develop Human Capacities	6
4	Future Opportunity for Continued Growth and Security	5
5	Social Integration in Work Environment	8
6	Constitutionalism in the Work Place	7
7	Work and Total Life Space	7
8	Social significance of Work Life	5
9	Occupation Designing	5
10	Occupation Enrichment	8
11	Occupation Involvement	8
12	Support in Decision Making	7
13	Training effectiveness	6
14	Job Satisfaction	30
	Total	119

LIMITATION OF THE STUDY

1. The study will be restricted to only Andhra Pradesh State.
2. The study will be done in a particular region. The result obtained cannot be generalized.
3. Due to time and resources constraint, data collection is not possible from other regions; thus, non-probability sampling will be used.

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A RISK ASSESSMENT OF FINTECH ADOPTION IN THE INDIAN FINANCIAL SERVICES INDUSTRY

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1. ABSTRACT

A fresh wave of technological dispersion and product developments has led to a global transformation of traditional financial services firms. A new financial market landscape has emerged as a result of the entry of financial technology enterprises, or FinTech. Technology used in the provision of financial services with an emphasis on challenging individual banks' business models. Tech companies that enable financial innovations with new products, processes, applications and business models have a major impact on the financial market; financial institutions and service delivery modalities are referred to as fintech companies. In the literature, technology disruption in the financial services business has been documented (Coetz'ee, 2019; Kolaa-Oye'neyin et al., 2020; Oj'o & Nwaaokike, 2018; Wan'g et a'l., 2020). As opposed to ignoring the disruption, financial institutions throughout the world are changing the way they do business digitally to allow Fintech integration to enable new products, innovative services, and modern business models that suit the digital expectations of their consumers'. There have been over US$647.5 million in Fintech investments in India in the last five years and there are already 200 Fintech companies in the country that are thriving.

While Fintech provides many benefits for both financial services companies and users, it is not without risks. This has resulted in both benefits and challenges for the financial ecosystem, which can only be dealt with by limiting the risk and reinforcing benefits from disruption. People believe that, regardless of the perceived hazards associated with Fintech, the comfort or ease of use that are its major benefits will always affect a user's attitude toward its usage

There are a number of occurrences that are similar to both digital technology solutions and platforms and financial markets that can pose a threat to Fintech adoption. An empirical examination of the risk drivers that could arise from Fintech adoption in Indian financial institutions, as well as an assessment of their crystallization probability, are the foundations of this article. To support this study, both qualitative and quantitative research methodologies were used. There are three sections in the paper: an introduction, a literature review, and an explanation of the technique. On page four, the findings were analyzed, and on page five a risk management strategy was provided. Section 6 concluded this paper.

Key Words: *Fintech, Operational Risk, Indian Financial market, Regulatory risk*

2. LITERATURE REVIEW

2.1 Adoption of Fintech and potential risks in the banking industry

The reality of digital technology risks has validated the potential risk prevalence in Fintech solutions, which are heavily reliant on digital technologies and platforms. It has been argued that, while Fintech has continued to gain user acceptance globally, its adoption is accompanied by a significant amount of risks to which customers may be exposed (Keong' et' a'l., 2020). As Fintech becomes more involved in banking, resulting in more traditional banks becoming digital banks, it is critical for operators and regulators to establish an effective risk management mechanism capable of increasing user confidence and instilling trust in the system. Figure 1 depicts the overall outlook of a digital bank in relation to the various risk types.

Figure 1: Outlook of a Digital bank vs. Risks

Source: Self-design

It has been shown in studies of Ukraine's Fintech market that the legal and regulatory environment, a lack of open APIs in banking, and a shortage of money for Fintech operators are the primary risk factors that hinder Fintech development (Sloboda' & Demianyk', 2020). Due to the inherent risks connected with Fintech, Indian institutions are known for being conservative and risk-averse when it comes to Fintech adoption. As a result, banks will be able to positively impact the rising market by adopting Fintech (Coetzee', 2019).

The pooling of intellectual property among the parties involved in partnerships for Fintech adoption is also a potential risk area. There have been instances where ideas were offered in confidence only to discover that the in-house IT team had already constructed something close to those ideas, as per a report (Sloboda' & Demianyk', 2020). Legal tools, like as non-disclosure agreements signed by all parties in the alliance, are often used to deal with cases of this sort.

For this reason, banks have been advised to be cautious and on the lookout for the negative impacts of Fintech development and to implement the necessary controls without losing sight of how important Fintech integration is for long-term stability of banking through new products and services, business processes, as well as an innovative financial model (Wang' et' al'., 2020).

2.1.1 Financial Risk

Financial risk refers to the likelihood that a consumer would suffer financial losses as a result of Fintech transactions, especially if these losses might have been prevented if the transactions had been conducted on a conventional platform instead (Keong' et al., 2020; Razzaque' et' al'., 2020). In addition, the financial service provider may be exposed to financial risk, which could affect the firm's operational budget. When a Fintech service launch takes longer than expected, Khalil' and Alam' (2020) say that this results in an increase in the total cost of implementation. Fintech's use of digital technology has increased financial risk, which could lead to a recurrence of financial losses caused by electronic fraud (e-fraud) (Keong' et' al'., 2020). In addition, these writers cited concerns connected to the budgetary exchange system, currency deception, and additional exchange fees that accompany the chosen value as additional causes or drivers of financial risk.

2.1.2. Legal or Regulatory risk

Law firms face legal risks when technology outpaces policy, resulting in regulatory loopholes, according to Razzaque' and colleague's (2020). As a result of this, governments around the world strictly supervise financial institutions, adhering to the regulations in place in their respective jurisdictions. RBI, SEBI, IRDA regulate Indian banks, for example (RBI). Regulators oversee other financial institutions, such as pension fund administrators and insurance companies as well as mortgage lenders and the stock market.

Law enforcement action and fines are possible outcomes if a financial institution violates legal and regulatory norms or current standards of operation as set forth by industry regulators (Khalil’ & Alam’, 2020). Although fintechs are not heavily regulated, certain nations such as the United Kingdom have instituted sandboxes to guarantee that products are adequately tested before they are released on the market (Keong’ et’ al’., 2020; Ojo’ & Nwaokike’, 2018). Bank Negara Malaysia, Malaysia's apex financial institution sets a framework to assess and assure any Fintech solution guarantees data privacy and safeguards of the financial system before rollout, according to Keong’ et’ al’. (2020).

While small, scattered and networked enterprises, Fintechs are renowned for insufficient internal control, lack of governance framework and inadequate regulatory oversight while participating in risk-taking behaviors (Yuan’ & Xu’, 2020). Adoption of Fintech in banking demands a regulatory alignment that might provide a business model free of regulatory violations. Although Fintech was born out of technological advancements meant to revolutionize the financial industry, regulatory rules would play a vital part in the risk governance of Fintech. There is a legal risk associated with Fintech operations due to the lack of clear norms and the ambiguity of legal status (Keong’ et’ al’., 2020). That's why a comprehensive legal system for effectively controlling the various risks associated with Fintech innovation has been proposed by Yuan’ (2020) and Xu’ (2020) in order to achieve a balance between technological innovation and risk prevention in order to create the right environment for a flourishing industry of the future.

A potential security hazard

Personal information, trade secrets and other confidential information of consumers may be exposed or lost, resulting in a possible loss known as a security risk (Keong’ et’ al’., 2020; Razzaque’ et’ al’., 2020). Data theft and degraded integrity, privacy confidentiality authenticity and accountability could result as a result (Razzaque’ et’ al’., 2020). Financial technology (Fintech) security issues are strongly linked with those of digital technologies due to the extensive use of digital components in Fintech products and platforms. As a result of cyber-attacks such as phishing, viruses, and e-fraud, certain risk crystallizations might be activated in digital systems. A recent study has found, however, that the perceived security risk hasn't greatly hampered the use of Fintech solutions (Keong’ et’ al’., 2020). Security solutions including encryption, multi-factor authentication systems, digital certification and others have improved user confidence and lessened the influence of security on users' desire to use Fintech, which is not unrelated to this development.

2.1.4 Operational risk

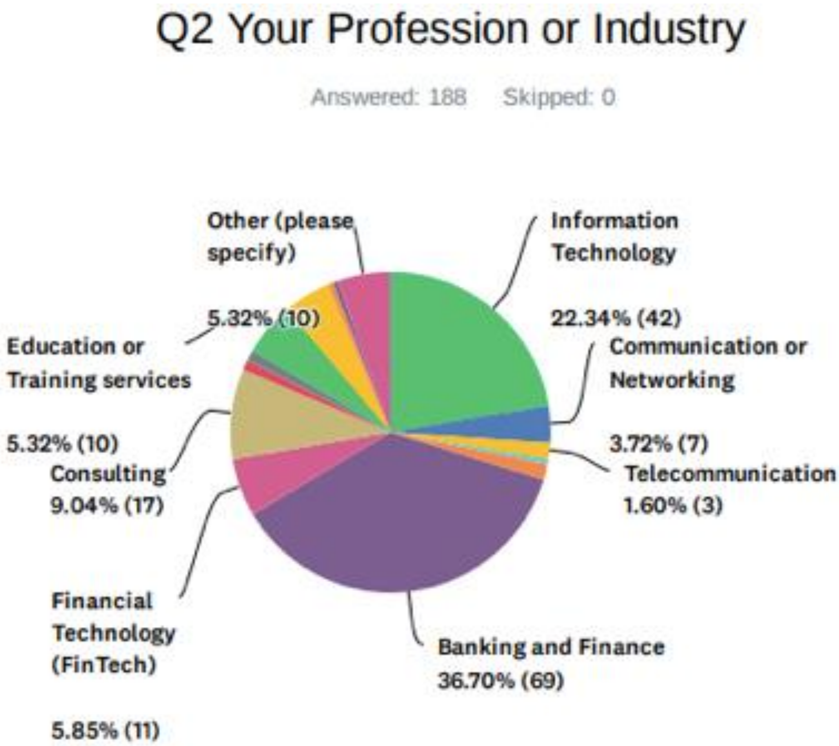
Financial technology's operational risk (OR) is influenced by internal elements that can be categorized into three main categories: people, procedures and systems (Khalil’ & Alam’, 2020). Anyone's production or product development relies on people, procedures, and systems, therefore any weakness or vulnerability in any of these factors could lead to the crystallization of a risk. Table 1 shows the association between operational risk trigger events and risk driver types.

It is a measure of the degree to which a firm's operations are vulnerable to threats. An operational risk is the chance of incurring losses due to failing or inefficient products, services. processes, systems. personnel (Keong’ et’ al’., 2020; Khalil’ & Alam’, 2020; Razzaque’ et’ al’., 2020). When Fintech solution providers are able to offer financial products and services in a threat-free environment, financial transactions will be secure. Operational risk, as defined by Keong' et' al'. (2020), refers to misfortune caused by defects or breakdowns in processes, people or infrastructure.

3. METHODOLOGY

In order to attain the stated goal, both qualitative and quantitative research approaches were used. According to the results of a thorough literature analysis, ideas were extrapolated and a conceptual framework was established around Fintech adoption in the financial services industry from both a global and India point of view. When it comes to operational risk, the qualitative study helped uncover and discuss all the many risk kinds and categories that exist, as well as their relationship to Fintech adoption and resulting disruptions in the financial services ecosystem.

An online survey was used to collect primary data from a sample population of approximately 306 people. There were 189 replies to the survey, with an overall completion rate of 84%, during the course of the study's eight weeks. In terms of educational background and professions/industries, the respondents came from a wide range of backgrounds. However, it was made a point to guarantee that survey participants were from relevant professions and sectors. In addition to these, the survey included participants from the fields of finance, Fintech, information technology (IT), and consulting, all of which were regarded as the study's most important target audiences. It is shown in Figure 2 how the responders are organized by their professions and industries. According to responses from 189 people, 37 percent of them worked for a bank or a financial institution, while 23 percent worked in information technology (IT). Fintech contributed 6 percent, while consultancy contributed 9 percent. 74 percent of the total replies came from these major industries.



Source: Self design

 ISBN: 978-93-93810-00-7

4. DISCUSSION OF FINDINGS

Participants were asked to rate nine risk drivers from the literature review based on their propensity to presage risk crystallization in the Indian financial system as a result of Fintech adoption, according to the survey's design. Here are the risk drivers, each of which has been assigned a number code:

Inadequacy of Fintech regulatory environment (01)

Unsupported Fintech operations due to insufficient laws (02)

It's all about cyber-security! (03)

Startups have a hard time getting finance (04)

Inadequate formal client protection mechanisms (05)

Abandonment of a formal code of conduct (06)

Bank competition (07)

Incubators for entrepreneurs are few and few between (08)

Absence of cooperation between Fintech companies (09).

Each participant was given a 5-point Likert scale on which to rate the likelihood of the following [mentioned above] elements posing risks to Fintech adoption in India. In fact, only 157 people responded to this question, as 31 people chose not to answer it all.

To improve objectivity across the items rated, the 5-scale Likert rating design allowed for a scoring range of 1 (Very Low) to 5 (Very High), with a regular gradation between scale points. The statistics shown in Table 2 are the results of the respondents' ratings.

Incidences of risk factors							
	Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Total	Weighted Average
Inadequacy of Fintech regulatory environment	3.22% (5)	7.70% (12)	33% (51)	35% (54)	22% (34)	156	3.65
Unsupported Fintech operations due to insufficient laws	3.21% (5)	8% (13)	28% (43)	38% (60)	23% (35)	156	3.69
It's all about cyber-security	5.13% (8)	3% (4)	26% (41)	27% (42)	39% (61)	156	3.92
Startups have a hard time getting finance	3.21% (5)	8% (12)	46% (72)	27% (42)	16% (25)	156	3.45
Inadequate formal client protection mechanisms	1.92% (3)	8% (12)	31% (49)	37% (58)	22% (34)	156	3.69
Abandonment of a formal code of conduct	2.56% (4)	8% (12)	35% (54)	38% (59)	17% (27)	156	3.6

Bank competition	2.56% (4)	13% (21)	31% (48)	30% (47)	23% (36)	156	3.58
Incubators for entrepreneurs are few and few between	4.49% (7)	10% (16)	42% (65)	30% (47)	13% (21)	156	3.38
Absence of cooperation between Fintech companies	4.49% (7)	10% (16)	36% (56)	35% (54)	15% (23)	156	3.45

As can be seen in Table 2, the respondents assessed that none of the risk factors had a high chance of crystallizing or portending risk to Fintech adoption in India. The WA for each of the risk categories was above Medium (3) and below High (4). But a WA above 3 indicates that the danger of crystallization is low.

The Median and Standard Deviation are presented in Table 3 for a better understanding of the ratings (SD). The SD can be used to determine the degree of agreement among responders. There is more agreement among respondents when the SD value is less. Median has also assigned each Mean (or WA) value the nearest scale point. Risk drivers with a median value of 3 and 4 can be found in Table 3. There, RD04, RD08, and RD09 each had a Median value of 3, placing them in the Medium (3) crystallization probability category.

It was also found that cyber security (WA = 3.92; SD = 1.10) was the leading risk factor for Fintech adoption in India while 'low number of incubators and sandboxes for startups' (WA = 3.38; SD = 0.99) claimed the last spot. Another study found that although security risks are real, they haven't deterred users from using Fintech. This is partly due to technological advances that have enabled security solutions such as encryption, multifactor authentication, tokens and more to provide a high level of comfort to users of Fintech (Keong' et' al'., 2020). Fintech's growth in India, on the other hand, may not be affected by a limited number of Fintech incubators and sandboxes, as this may never become an issue. Fintech investment in India has grown enormously as a result, despite the risks outlined. Over the past six months, financial customers increased their Fintech adoption by 54 percent (Kola'-Oyeneyin' et' al'., 2020).

5. A Framework for Risk Management in Fintech Adoption

There is a constant when it comes to managing risk: identify and minimize the danger and vulnerability that combine to activate risk crystallization, no matter what form of risk it is. A graphic representation of the risk crystallization formula is shown in Figure 4.

Source: Self design

In Figure 4, risk crystallization is a function of threat and vulnerability. If the threat or vulnerability component has a zero potential value, then the risk management should be constructed so that no risk crystallization will occur as a result! To represent risk crystallization scenarios mathematically using the risk formula, consider the following:

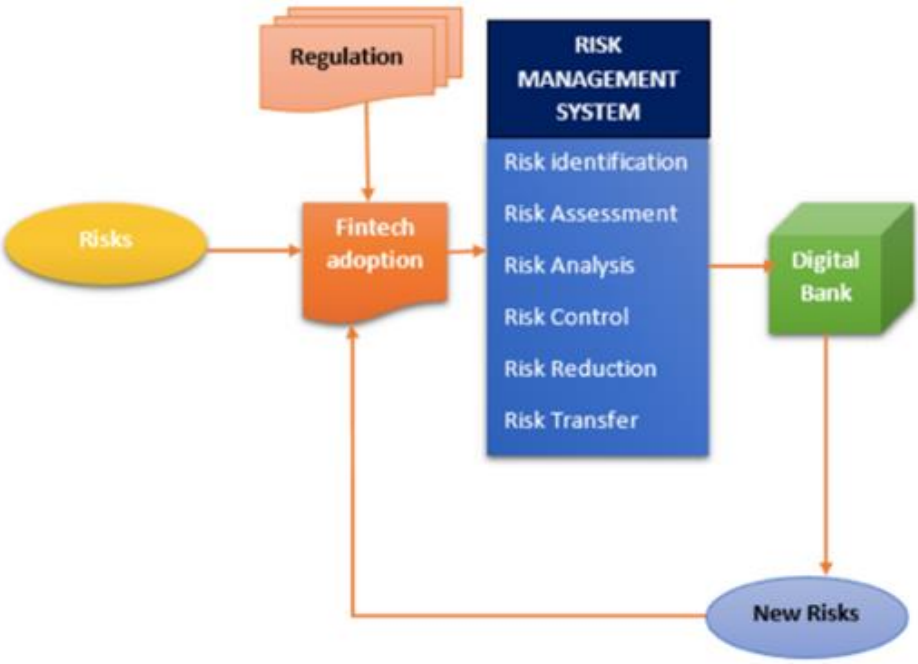
The formula is: T(0) x V(n) = (0)

When you multiply the number T(n) by the number V(n), you get R(0) (n).

Risk crystallization would be zero for the scenarios represented in equations (1) and (2) because one of the multipliers (threat or vulnerability) would be lowered to zero. Contrariwise, if the multipliers were non-zero, the scenario (iii) would result in a crystallization of risk. For a risk to crystallize, a threat must be able to exploit an existing vulnerability.

A risk management framework designed to promote the stability of the growing digital banks is advocated, given the reality of the risks connected with Fintech adoption and the fact that Fintech is here to stay and has redefined the landscape of the Indian financial services market. Banks in the digital age would not only have to deal with existing risks, but also with new ones that would emerge as a result of input from consumers and the identification of new risk drivers that are arising from growing technologies and market factors

Regulation and legislation are crucial to the financial business; thus a perfect framework must include regulatory input. So that Fintech integration in banking may thrive, regulations must be especially tailored to clean up the Fintech sector and stabilize it while standardizing operator operations. The recommended framework for risk management is shown in Figure 5.



Source: Author Design

6. CONCLUSION

Financial technology (Fintech) adoption has expedited transformation in Indian banks and the financial services industry in general. Fintech is progressively being integrated into traditional banks' digital business operations, allowing them to become more digital. Fintech adoption comes with risk's, despite the fact that the development is revolutionary and has gained wide support among financial customers.

Fintech adoption in Indian banks is being studied using qualitative and quantitative research approaches. All of the risk factors found in this investigation have crystallization probabilities ranging from modest to high, according to empirical evidence. Severely crystallizing was predicted for six of the nine risk factors assessed quantitatively, with the remaining three showing medium crystallization likelihood. For the sake of alignment, operators and regulators in the banking and financial institutions ecosystem should be aware of this consequence and incorporate it into their risk management processes

As a result, a risk management framework has been developed for Fintech adoption in India in order to create a more suitable climate for bank digitalization in India through Fintech adoption. An industry capable of propelling the new market and the larger digital economy would emerge as a result.

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ABOUT THE BOOK

In the present scenario, financial services sector has undergone manifold changes that has completely changed the way transactions used to be done earlier. Now, cash payments, in person visit to banks or financial institution for investments/deposits are all fading away. A new digital financial environment is spreading its wings making it more convenient and safe for the users. This book is an attempt to include the researches focussing on latest trends that are contributing in revolutionizing the financial sector. This book presents a comprehensive view of the latest trends in financial sector such as evolution of FinTech companies, UPI, use of artificial intelligence in banking, mobile banking and many more.

We hope that this book will help in providing a better understanding and enhancing the knowledge of the new financial trends to students, research scholars, academicians and corporates.

Empyreal Publishing House

ISBN 978-93-93810-00-7

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