

A Study on Trends, Determinants, and Financial Impact of Non-Performing Assets in Indian Banking Sector: A Primary Data Approach

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ABSTRACT

In India, this historical trend of non-performing assets (NPAs) is aims to understand a contributing major various factor that which helps to give the growth of NPAs, and to analyses their effect on economical health of banking industry. The research focuses on India's pattern and movement of NPAs over a significant timeline across public & private banks. In the Indian banking sector, NPA is most challenging one, which affect profitability, credit expansion, financial stability and overall liquidity. Further the major internal and external factors to be investigated for the growth in NPAs, like economic deceleration, ineffective monitoring, and poor credit appraisal, sectoral imbalance, & policy-related issues. The research is a quantitative in nature and its work according to the secondary and primary data, which is gathered through bank managers having experience in loan management and NPA handling. These study findings determinate to enable a clear consideration of NPA scenario in Indian banks and its conclusion for the soundness and sustainability of the banking industry.

Keywords Indian banks, historical trend analysis, Non-Performing Assets, financial health, profitability, asset quality, banking sector.

INTRODUCTION:

1.1 Background

In recent years, the Indian banking sector has undergone a major transformation from liberalization reforms of 1990s, with the NPAs developing as the persistent challenge to the financial stability & economic growth [1]. The NPAs represents the loans where borrowers defaulted on the principal or interest payments for the certain period, like 3 months, leads to the decreased profitability, forced liquidity, & the eroded capital bases for banks [2]. In India, NPA crisis were reached the severe levels before 2014, stimulating regulatory interventions like, AQR (Asset Quality Review) introduced by the Reserve Bank of India in 2015, followed by implementation of IBC (Insolvency and Bankruptcy Code) in 2016 [3].

In India, a trends of NPAs witnessed the substantial fluctuations in past decades, considerably impacting banking sector's stability & efficiency. In India, Scheduled Commercial Banks gross NPA ratio is increases in the year between 2013 to 2018, in March 2018, it reach a high percent (12%), before reducing to 5.8 percent remains crucial in the Public Sector Banks, which is responsible for the NPA's high total share, when related to the Foreign Banks (BBs) & the Private Sector Banks (PSBs).

In the Indian banks, the increasing NPAs are resulted from the complex relationship of managerial aspects, macroeconomic, and sector-specific. The major contribution is the overall economic slowdown, and it reduced the borrowers' capability to service loans. This

reduced growth of GDP has doubled through the global market doubts and inflationary pressures, which directly influenced the firms like infrastructure, manufacturing, and power, leading to increasing defaults. This instability of macroeconomic integrated the crucial vulnerabilities in the banking sector.

Also, through the external economic pressures, the internal aspects in the bank has contributed substantially to development of NPAs. Ineffective risk management & credit evaluation processes are leads to allow high-risk loans. The hostile loaning practices are functioned through the require for capturing a market share. Sometimes it compromised because of exposing banks & diligence of borrowers through indeterminate settlement abilities. However, the lack of strong regulating system postponed the documentation of possible defaults, further worsening situation.

In Indian banking sectors, rising of NPAs level are has a deep allegations for the economic growth, investor confidence, and financial stability. The High NPAs erodes the bank profitability and restricts the credit availability, which leads to to strike in financial activities. The negative impact extends above the banking sector, impacting the economic, businesses, and employment development [1].

In India, this research analyses NPAs trends and determinants in the public & private section banks. In Indian banks, these is only limited studies analysing bank-specific drivers of NPAs in the current phase. However, bank-specific factors/drivers of NPA in Indian banks are

analytically evaluated for the post-crisis period (2010 to 2020). Hence, this present research determines the major internal and external aspects accountable for NPAs development, like economic slowdown, sectoral imbalances, poor, appraisal, policy-related issues, and ineffective monitoring. It also assesses how NPAs development impacts the main economical health of bank indicator like operational efficiency, capital adequacy, profitability, and asset quality.

Problem Statement

Despite its extensive study on NPAs at national level, the region-specific analyses remained scarce. The conflicting ownership structures, governance frameworks, & the business models between public & private sector banks suggests the possibly diverse trajectories in the NPA accumulation and resolution. Although, there has the empirical evidence comparing these trajectories in the Indian Private & Public sector banks is limited. Hence, these gaps are predominantly consequential for the policy formulation, and the uniform national policies may not adequately address the Private & Public sector bank challenges.

RESEARCH OBJECTIVES

The main objectives of this research is,

To examine the historical trends of Non-Performing Assets (NPAs) in Indian banks.

To understand the major factors contributing to the NPAs growth, and to examine their effect in financial health of banking industry

To examine the India's pattern and movement of NPAs over the significant period across private & public sector banks

To investigate a major internal & external factor responsible for the rise in NPAs, like economic slowdown, ineffective monitoring, poor credit appraisal, sectoral imbalances, and policy-related issues.

Paper Organization

The remaining section of the paper is organized as follows: the existing research associated with NPAs in the Indian banking sector is reviewed in Section 2. In Section 3, describes the research methodology like, research design, variables, data collection, and analysis method. Results are analyzed in the Section 4. Research findings and overall analysis are discussed in Section 5. Finally, the study concludes by providing a brief overview of the study.

LITERATURE REVIEW

Determinants of NPA

The determinants of NPAs have categorized into 2 types: external and internal elements. Internal elements are considered as the core to a banking process. But external factors are exogenic to a bank's process, and it could impact the loan result, which included macroeconomic aspects, such as the regulatory and industry specific factors. The Major determinants of NPAs consists of weak market examining, inadequate corporate governance,

weak banking regulations & supervision, and negative financial conditions. Mostly the research [4, 5] were determined a crucial role of macroeconomic features which drives NPAs. With the bank-level and macroeconomic factors, financial development and its structure were considered when explaining NPLs. The research [6] analysed the financial development role in NPLs persistence. This analysis of cross-country has suggested that development of NPL resulted in financial development enhancement, because of the weak management in financial intermediation method. Although, study [7] restricted its analysis by focusing on the bank-specific NPAs determinants.

The study [8] focused to analyses the effects of the chosen financial ratios which represents the NPA determinants under the profitability, capital adequacy, solvency, operational capability, capacity of business development, and liquidity of bank in the NPAs for 76 Indian commercial banks, utilizing the annual data in the years from 2010 to 2021. The study conducted OLS model, random effect estimates & fixed effect, functional GMM technique for the purpose of examining its association. Finally, the findings indicated that the past NNPA had contributed to the additional level of the NNPA in current period. Also, there has the negative relationship between NNPA ratio and ROA but there has the positive relationship between dependent variable and capital adequacy ratio. To decrease aggregate NPAs in the India, government must identify vulnerabilities in the financial sector, hence, highlight increasing economic growth, verifying the modest money supply level through the rate of inflation. These results will help to formulate the macro-practical through the economic procedures for avoiding the consequent NPAs shock in the India.

The study [9] analysed factors responsible for NPAs in the banks in India, by focusing on a bank-specific factors. The Panel estimation of total 43 Indian banks, such as 5 foreign banks, 16 private banks, and 20 PSBs, were directed from 2005 to 2020 for analysing bank-specific factors which affects NPAs. The research findings show the insufficiencies in lending quality and earning management that are accountable for NPA predicament in Indian bank. Also, it requires a earning tactics and revisit lending of Indian banks. The PSBs are specifically needs to emphasis on the lending strategy because these bank groups are the significant lending resources to industrial sector and infrastructure.

Trend Analysis of NPAs

Like the other organization, the banks having the several assets like, the other investment assets, long-term, investment securities, marketable & loan securities, and current assets. Some assets were considered as the performing assets which means it is able to earn the return. The other assets are the non-performing assets that did not has the ability to retrieve advantage because of the other reason. So, NPAs are not achieving the any profits in interest, and it is disclosing a common risk, which endures in productive asset types. But, if the assets achieved any profits in interest, it discloses a uncommon risks, and it becomes a 'Non-Profitable Asset' and a non-productive

asset. If the bank drops all income like interest, fees, and commission, it would be aroused.

NPAs are apparatus and it helps to evaluate the robustness and economic health of the financial sectors, including banks. NPAs are plays a significant role in banks by expanding their functional costs and decreasing their interest points. These reduction in banks profit could impact the industrial sector & economy and banks performance [10].

2.3 IMPACT OF NPA

Impact on Banks Stability

Each loans & advances are enabled by the banks, and customers are significant in banks total assets and these assets increase the income in the form of bank interest. The conversion of these assets to NPA leads to reduce the level of profit. The ratio of capital adequacy has impacted, and the capital cost increase due to the development in NPAs. Hence, the level of NPAs affects the banks stability.

Impact on Borrowers

The NPAs rise affects concerned bank & customers and borrowers. The NPAs level affects lending ability of banks & potential genuine borrowers. The Banks restructures losses to other debtors through giving the high rate of interest and attempt to reward the bank in order to developing the NPAs.

Impact on Lending

When the bank face a lose in income of interest because of nonpayers, which result in borrow the genuine lenders. The banks are hesitant to offer the loans to some debt sectors, if any firms suffered from losses or not has the ability to pay their charges in certain period.

Impact on Liquidity

Once the banks losses their redistribute, genuine borrowers burden increases and impact their effectiveness, and also leads to encounter liquidity crisis because of increasing NPAs, and it also affect banks payment level.

Stressed Assets

The banks stressed assets has include the NPAs, written off loans and restructured loans. NPAs did not shows the loans bad asset quality. Some loans are updated by the banks, which offers the opportunity to debtors to done a settlement in the specified time period, and written off loans are measures as non-collectable, but the bank account didn't close because the bank hoped to claim it in future. Stressed assets are considered as the powerful indicator & provides the health of banks [10].

RESEARCH METHODOLOGY

Aim of the study

The main objective of the study is to analyze trends of Non-Performing Assets (NPAs) in Indian banks to understand major factors contributing to NPAs growth and to analyze their effects on banking sectors financial health.

3.2 Research Design

The research implements a cross-sectional , analytical, and quantitative research design based on primary data. It aims to capture expert insights from banking professionals regarding the historical trends of NPAs, contributing factors, and their impact on financial health.

Sample Size

Sample of respondents 150-200, working in 3 private banks and 2 public sector banks.

Sampling Method

The technique of Stratified Random Sampling is used and target respondents will be workers, those are working in a Indian private & public banks who worked under loan management Sampling Technique.

Data Collection Method

The structured Questionnaire is used in this study with bank managers, recovery officers who all are having experience in loan management and NPA handling

Data Analysis Method

The primary data would be gathered from a bank managers and recovery officers having experience in the loan management and NPA handling. The structured questionnaire will be administered to capture information on the demographic aspects like the income, organization type, age & gender. Then the Responses will be measured by using the seven-point Likert scale measured from *strongly disagree* to *strongly agree*. Software for analysis will be SPSS and AMOS for SEM model Development.

Variables of the Study

Dependent Variable

Financial Health of Banks

Independent Variables

Factors contributing to NPAs:

Credit appraisal inefficiency

Monitoring issues

Economic factors

Borrower behavior

Policy/regulatory factors

Mediating Variable (Optional – adds strength)

Level of NPAs (perceived trend/severity)

Tools for Data Analysis

Descriptive Statistics (Mean, SD):

The Descriptive statistics denotes by the statics suite which summarizes distribution and characteristics of a data values, like measures, including maximum, mode, median, minimum, range, standard deviation and mean. It also provides the information that acts as the foundation for relating how several data series are vary.

Reliability Test (Cronbach's Alpha):

To calculate the core consistency reliability of questionnaire, the Cronbach's Alpha are used. It assesses how thoroughly associated the items sets (question), and

indicating whether they collectively measure the single latent construct

Correlation Analysis:

The Correlation analysis would be conducted for examining the degree of relation between 2 factors. The findings show whether the associations are statistically important and whether they are negative or positive in this direction.

Multiple Regression Analysis:

To predict the single dependent variables, Multiple Regression Analysis (MRA) are used, and these values are based on 2 or more independent variables.

ANOVA (for group differences – public vs. private banks):

ANOVA (Analysis of Variance) is a technique used to compare the means of three or more independent groups to determine whether at least one group mean is substantially varied from the others. ANOVA tests for a significant differences by analyzing the ratio of variance between groups to within groups.

Data analysis and interpretation

Table 1: Demographic variables

Gender	Frequency	Percent
Male	94	59.50
Female	64	40.50
Age	Frequency	Percent
31 - 40 years	29	18.40
41 - 50 years	3	1.90
Above 50 years	126	79.70
Education	Frequency	Percent
Undergraduate	39	24.70
Postgraduate	82	51.90
Professional	37	23.40
Type of Bank	Frequency	Percent
Public Sector Bank	116	73.40
Private Sector Bank	42	26.60
Designation	Frequency	Percent
Branch Manager	63	39.90
Credit Officer	31	19.60
Loan Processing Officer	28	17.70
Recovery Officer	9	5.70
Others	27	17.10
Total years of work experience	Frequency	Percent
5 - 10 years	41	25.90
11 - 15 years	96	60.80
Above 15 years	21	13.30
Previous experience in loan handling	Frequency	Percent
Yes	140	88.60
No	18	11.40

Banking Operations Experience	Frequency	Percent
Below 1 year	12	7.60
1 - 5 years	24	15.20
6 - 10 years	61	38.60
Above 10 years	61	38.60
Have you directly handled or monitored accounts classified as Non-Performing Assets (NPAs)?	Frequency	Percent
Yes	138	87.30
No	20	12.70
Total	158	100.00

A demographic profile of respondent's majority of a sample are male and the respondents age criteria is above 50 years and most probably post graduates. The reliability and relevance of this study on the financial impacts, trends. The respondents are mostly from Indian public sector banks. The sample comprises banking professionals through private & public sector banks which possess substantial industry expertise and majorly on

branch managers with an experience of 11-15 years who is having experience in loan handling division, banking operations and do have experience in handling NPA Accounts. Additionally, a large part has extensive experience in loan management and direct exposure to NPA accounts. This finding ensures in practical banking realities enhancing the credibility, depth of the study's conclusion

Table 2: Correlation analysis

Correlations	Credit appraisal inefficiency	Monitoring issues	Economic factors	Borrower behavior	Policy/regulatory factors	Level of NPAs	Financial Health of Banks
Credit appraisal inefficiency	1	.850**	.868**	.822**	.930**	.906**	.706*
Monitoring issues	.850**	1	.884**	.830**	.861**	.925**	.744*
Economic factors	.868**	.884**	1	.849**	.861**	.963**	.778*
Borrower behavior	.822**	.830**	.849**	1	.840**	.897**	.704*
Policy/regulatory factors	.930**	.861**	.861**	.840**	1	.906**	.714*
Level of NPAs	.906**	.925**	.963**	.897**	.906**	1	.784*
Financial Health of Banks	.706**	.744**	.778**	.704**	.714**	.784**	1

Among all determinants the strongest association exhibit in economic factors with NPAs (r = 0.963) correlation analysis reveals strong and significant positive relationship among the NPAs level and primary determinants of NPAs mentioning that asset quality influenced by a complex interaction of internal banking

practices and borrower related things, macro-economic conditions. The independent variables are highly interrelated with other factors which appraisal inefficiency is content with policy and regulatory factors (r=.930), Mostly the financial health of banks is strongly associated with NPAs and its implies that rising NPAs

affect profitability, capital adequacy, efficiency, and overall financial stability. Similarly, the regulatory factors ($r=0.906$) show a strong positive relationship with NPAs while surveillance issues are interrelated with economic factors ($r=0.8840$ and policy factors. Summarize the

finding that effective NPA management requires the combining robust credit appraisal systems, borrower assessment mechanisms and proactive responses to strengthen quality & ensure long-term economic sustainability in their banking sector

Table 3: Regression analysis

Model	Sum of Squares	df	Mean Square	F	p value
Regression	123.044	5	24.609	50.242	.000b
Residual	74.45	152	0.49		
Total	197.494	157			
Coefficients ^a	B	Std. Error	Beta	t	p value
(Constant)	0.175	0.236		0.742	0.46
Credit appraisal inefficiency	-0.023	0.129	-0.026	-0.178	0.86
Monitoring issues	0.206	0.12	0.205	1.709	0.09
Economic factors	0.458	0.119	0.49	3.845	0.00
Borrower behavior	0.073	0.103	0.075	0.714	0.48
Policy/regulatory factors	0.077	0.151	0.076	0.508	0.61
a Dependent Variable: Financial Health of Banks					

This regression analysis it is found that credit appraisal inefficiency is the most dominant prevailing factors which affect Indian banking performances.as evidenced by a statistical model ($F= 50.242$, $p<0.001$) and the findings reveal that economic factors are predictor of financial health, indicating the critical role of economic conditions in banking performance. And it's found that the analysis that credit appraisal inefficiency leads to very high NPA in Indian banks which affects its day today functioning & profits. So, there is a need for effective credit appraisal

which is indicated with the regression P value score of 0.86. So, there is a need for transformative practices and reorientation of Indian banking system which can reduce the challenges which are more prevalent in credit appraisal which lead to inefficient Indian banking operations & management. There is a need for effective NPA policy orientation and strategies which can reduce these credit appraisal inefficiencies which is indicted with the P score of 0.09. These results suggest internal banking practices remains important external economic conditions that which most dominant role in determining financial stability and institutional performance

Table 4: Reliability Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
0.873	7

The value of Cronbach's Alpha value is 0.873, indicates a very strong reliability of the chosen factors for analysis. This instrument's variables exhibit a significant degree of homogeneity, as evidenced by a 0.873 of Cronbach's Alpha coefficient. This also suggests that the responses supplied by participants are highly consistent across various items related to the study constructs.

Table 5: Chi square analysis 1

	Financial Health of Banks					Total
Credit appraisal inefficiency	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Strongly Disagree	11	0	1	1	0	13
Disagree	5	5	6	1	0	17
Neutral	0	2	6	1	0	9
Agree	0	0	8	39	11	58
Strongly Agree	0	4	7	41	9	61
Total	16	11	28	83	20	158
Chi-Square Tests	Value	df	p value			
Pearson Chi-Square	155.245a	16	0.00			
Likelihood Ratio	128.133	16	0.00			

The value of Pearson Chi-Square is 155.245 with 0.000 of p-value & 16 degrees of freedom. It also provides deeper insights in to credit appraisal inefficiency & financial health of Indian banks. It is found a high degree of correlation between the two factors which are also significant as it shows that the association is also strong. It is found that there is a strong relationship which is known by 128.133 of likelihood Ratio through a 0.000 of p-value. The research also shows the important association of these two factors, so it rejected the null hypothesis and the p-value is significantly less than 0.05. Which evident that the nature and prevalence of prominent credit evaluation and process is very critical in Indian banking system, process & practices. It is also

found that credit management is an important factor which leads to development as it is also critical for management of financial health as well. Chi square results are very important as it also clearly indicates that there has been a larger reduction of financial health in Indian banking system due to ineffective credit appraisal methods, policies & practices. It is evident that there is a strong consistency in the responses provided who directly acknowledge the relationship between ineffective credit appraisal methods and financial health of Indian banks. It is also observed that these responses are given by bank managers who are directly dealing with NPA processes for more than a decade which gives clarity on the misdirected & ineffective credit appraisal methods which are more prominent in Indian banking systems.

Table 6: Chi square analysis 2

	Financial Health of Banks					Total
Monitoring issues	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Strongly Disagree	3	0	0	0	0	3
Disagree	13	1	1	1	0	16
Neutral	0	6	12	2	0	20
Agree	0	1	4	18	6	29
Strongly Agree	0	3	11	62	14	90
Total	16	11	28	83	20	158
Chi-Square Tests	Value	df	p value			
Pearson Chi-Square	186.379a	16	0.00			
Likelihood Ratio	136.771	16	0.00			

This chi square analysis provides insights on the association between monitoring issues in the Indian banking system & their effects on financial health. It has been found in this study that monitoring issues have deepening and strong impact on financial health as it could deteriorate in the long run. This analysis also provides clarity on effective monitoring system which has to be implemented in Indian banks as it could ensure financial health and progress towards future. The value of Pearson Chi-square is 186.379 by a 0.000 p-value and 16 degrees of freedom proves the association between these two factors. Likelihood Ratio statistic of 136.771, also significant at the level of 1 percent. This resulted in the null hypothesis rejection and also leads to lower p-value and a high threshold value of 0.05. It is also found in this analysis that the major banking challenges in Indian banking system is due to monitoring process which has to be made more efficient and effective. This has been stated

by Indian banking professionals as it shows the real condition of Indian banking system & its process. There has been a lack of effective monitoring after loan dispersal which indicates the need for follow up and recovery. This also indicates that the recovery process has been slower and ineffective in Indian banking system which has led to larger accumulation of NPA. There is also a need to provide loans after careful monitoring and scrutiny which can also ensure recovery. Such prudent & effective system has to be crafted and implemented to manage NPA in Indian banks which is the need of the hour. There is also a need to identify NPA problems at an early stage which can ensure recovery as accumulation of NPA could be avoided as it also leads to reduction in NPA. It is found in this analysis that financial health of Indian banks has been greatly reduced to a larger extent with ineffective monitoring mechanisms which need to be strengthened.

Table 7: Chi square analysis 3

	Financial Health of Banks					Total
Economic factors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Strongly Disagree	6	1	1	0	0	8
Disagree	10	0	0	1	0	11
Neutral	0	5	11	1	0	17
Agree	0	2	4	9	2	17
Strongly Agree	0	3	12	72	18	105
Total	16	11	28	83	20	158
Chi-Square Tests	Value	df	p value			
Pearson Chi-Square	187.234a	16	0.00			
Likelihood Ratio	141.037	16	0.00			

In this analysis it has been found that economic factors do affect the economic performance & health of Indian banks are really significant. Chi square analysis indicates that economic factors do impact the economic health and performances. This also indicates a need for proper monitoring and management of economic factors as it lead to macroeconomic stability and functioning. The value of Pearson Chi-Square is 187.234 by the 0.000 of p-value and 16 degrees of freedom shows the strong impactful interconnection with these factors. It is also found in this analysis that there is a robust association which has been proven with Likelihood Ratio statistic of 141.037, as it is

at 1%. It is also stated that the null hypothesis for the relationship between these two factors is totally rejected, and it also find the p-value which is less than 0.05. This clearly provides substantial empirical evidence that economic factors do influence performance & financial health of Indian banks. It also observed that the banking professionals do agree that financial health of Indian banks is largely affected by economic factors. There is a need for strong regulatory and monitoring mechanism by RBI which could reduce these economic fluctuations and challenges in the long run.

Table 8: Chi square analysis 4

	Financial Health of Banks					Total
Borrower behavior	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Strongly Disagree	8	0	0	0	0	8
Disagree	8	1	1	1	0	11
Neutral	0	6	10	3	2	21
Agree	0	3	6	30	10	49
Strongly Agree	0	1	11	49	8	69
Total	16	11	28	83	20	158
Chi-Square Tests	Value	df	p value			
Pearson Chi-Square	175.803a	16	0.00			
Likelihood Ratio	127.842	16	0.00			

Results on this analysis provide a 175.803 of Pearson Chi-Square value with the 0.000 of p-value and 16 degrees of freedom, which validate the strong interrelation between financial health and economic factors of Indian banks. In this square analysis, the relationship between financial health & borrower behavior is explored & investigated. It is found in this analysis that there is a strong impactful relationship which prevails between borrower behavior & financial health of Indian banks. This analysis also provides 127.842 Likelihood Ratio as it is at 1% empirically confirms the strong association of these factors. It is also indicating the null hypothesis that are framed for this study are totally rejected and result in a p-value that is less than 0.05. It clearly shows that

borrower’s behavior strongly influences the banks financial health, and the banks needs to regulate the financial transactions & credentials along with credibility of the borrower. It is also found in this analysis that borrower behavior strongly influences the NPA patterns as it also has significant effects on financial health of Indian banks & their process. It is also found in this analysis that banking professionals do acknowledge this significant correlatory effects of borrower & their behavior which strongly affects the NPA position which could have cascading effects on the economic health of Indian banks. The analysis also indicate that need for prudent monitoring & evaluating mechanism for borrower in Indian banks which could directly reduce NPA and its occurrence in future.

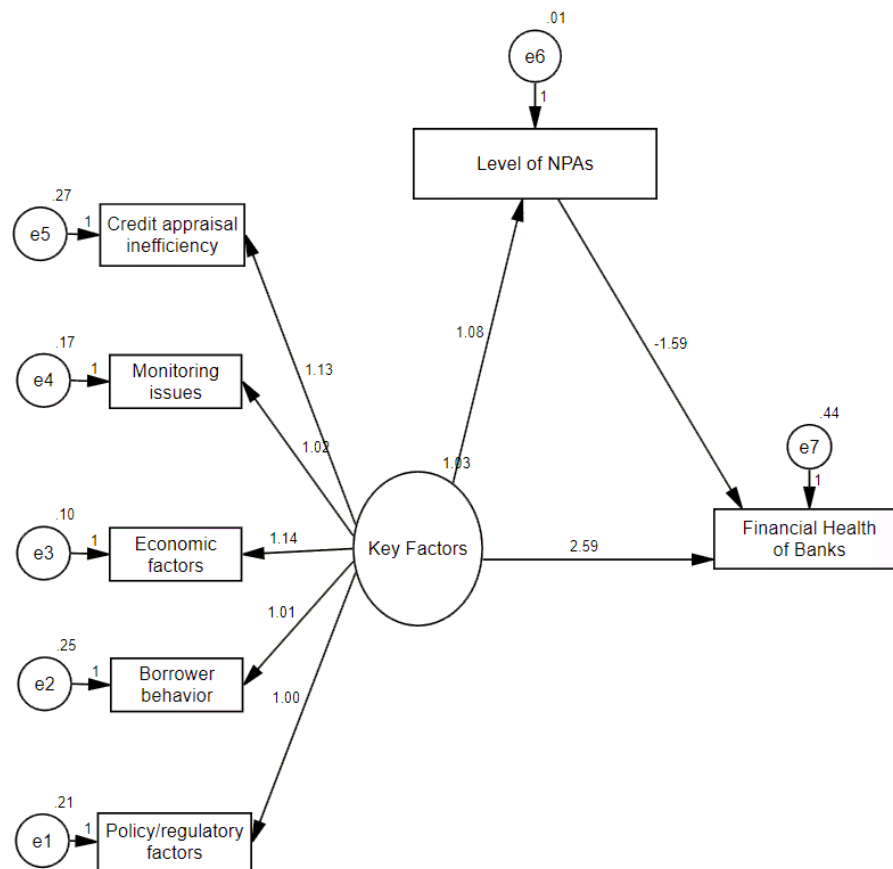
Table 9: Chi square analysis 5

	Financial Health of Banks					Total
Policy/regulatory factors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Strongly Disagree	5	0	0	0	0	5
Disagree	11	1	1	1	0	14
Neutral	0	6	12	2	0	20
Agree	0	0	4	31	8	43
Strongly Agree	0	4	11	49	12	76
Total	16	11	28	83	20	158
Chi-Square Tests	Value	df	p value			
Pearson Chi-Square	188.669a	16	0.00			
Likelihood Ratio	141.7	16	0.00			

A need for effective regulatory and policy frameworks in Indian banking system is evident in this analysis. The role of RBI & its regulatory mechanism is most important as it must provide regular directives which can improve the Indian banks' financial health. This chi square analysis, the relationship between policy/ regulatory factors in Indian banks and their effect on financial health is evaluated and investigated. It also that policy/ regulatory factors in Indian banks have a strong influential positive impact on financial health. The value of Pearson Chi-Square is 188.669 with 0.000 of p-value and 16 degrees of freedom, empirically proves the interrelation in policy/ regulatory factors & financial health of Indian banks.

Likelihood Ratio statistic of 141.700 is significant at 1% level. It is also clearly evident that the null hypothesis framed on these variables is rejected as p-value is significantly lower than 0.05. The banking professionals who deal with NPA also acknowledge this empirical evidence as policy/regulatory frameworks has a strong effect on Indian banks' financial health & its performances in the long run. A proper regulatory banking framework could also lead to sustainable banking practices.

Structural Equation Model



Variables	Variables	Estimate	S.E.	C.R.	p value
Level of NPAs	Factors	1.077	0.04	27.054	0.00
Policy/regulatory factors	Factors	1			0.00
Borrower behavior	Factors	1.012	0.054	18.78	0.00
Economic factors	Factors	1.139	0.048	23.6	0.00
Monitoring issues	Factors	1.018	0.049	20.608	0.00
Credit appraisal inefficiency	Factors	1.135	0.058	19.504	0.00
Financial Health of Banks	Level of NPAs	-1.591	2.297	-0.692	0.49
Financial Health of Banks	Factors	2.589	2.488	1.041	0.30

This SEM model does provide unique insights on ways & means to develops the Indian banks' financial health and it also does find that there is a direct relationship between the nature & prevalence of NPA as it does impact the Indian banks' financial health. It finds that increase in NPA affects the Indian banks' financial health which reduced to the very larger extent which indicates that varied inconsistent patterns or high sudden increase in NPA could significantly affect financial health of Indian banks. This SEM model also warrants that there is a need for proper NPA management which can lead to sustainable Indian banking performances and It is also found that all factors chosen for this study are correlative in nature, and it impacts the Indian banks' financial health & its outlook towards future. This model has the relationship between economic factors & NPA is found to be more prominent and significant which can be known from the value estimate of 1.139, it has 23.600 of critical ratio, and 0.000 of p-value. It is also found that credit appraisal inefficiency has been more prominent and evident in Indian banking system which has been empirically exposed in this study. The latent determinant construct with a critical ratio of 19.504, an estimate of 1.135, and 0.000 of p-value empirically proves the association between credit appraisal inefficiency & deplorable increase in NPA across Indian banking systems & process.

FINDINGS & SUGGESTION

The demographic findings do indicate the nature & prevalence of sample respondents who have responded in this study. It is found that majority of the sample respondents do have adequate experience in NPA accounts handling which indicates the right choice of the sample. It is also find that in the research most of the sample respondents do have experience in the banking operations which also shows that they have adequate knowledge and experience in banking operations which do make them eligible as sample respondents. This also indicates that the choice of the sample respondents is right. As majority of the sample respondents are above 50 years it indicates that they are quite experienced and well versed with NPA operations as the choice of the sample respondents is justified. It is found in this study that credit appraisal inefficiency is the most consistent prevailing problem in Indian banking system which needs to be addressed with immediate care & concern towards 2035. It is also found that techno impetus in Indian banking system has opened up new possibilities and avenues. This techno orientation must be adapted in credit appraisal as human interface & interventions have to be largely reduced. Based on specific criteria and document verification done – the techno AI proactive process could lead to sanction of loans which involves Zero human touch. This could be a more effective transparent process as it also reduces credit appraisal defaults and human manipulations. This can also ensure AI oriented NPA transformatory appraisals in Indian banking system

CONCLUSION

It is concluded that improper credit appraisal methods & poor monitoring system has lead to higher NPA levels which really haunted the Indian banking system & its performances. This has also affected the Indian macroeconomic stability & performances. This has also largely affected Indian organizations as they are unable to realize their maximum output on comparison with their potential. This is a pestering Indian menace as it has largely affected global image of Indian banking system.

This study concludes that credit appraisal methods in Indian banks have been largely functional as it has never been purposive, focused or effective. This ineffective credit appraisal method has led to larger NPA levels which has shattered the economic performances of Indian companies. There is a need for proper regulatory mechanism that enable new strategies & insights for future.

It is concluded that there is a need for techno interface in Indian banking credit appraisal & approval mechanisms which can largely reduce this challenge. It is also evident that NPA & its prevalence have largely reduced since 2018 with prudent Indian banking regulatory mechanisms and its effective implementation.

There is a long way to go as these macroeconomic challenges do not end here. It is concluded that economic factors also do affect the way & nature of Indian banks functioning. It concluded that RBI should be more active & vigilant in effective monitoring & management of Indian banks which can provide stability in its functioning along with macroeconomic sustainability.

It is concluded that AI oriented credit appraisal mechanism & its effective implementation could lead to proper monitoring & control in NPA management. It is concluded that Indian banks should adapt to AI oriented credit approval and management as it could also increase financial health with sustainability of Indian banks.

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