



SEVERITY OF NON-PERFORMING LOANS OF SELECT INDIAN BANKS: A FACTOR ANALYSIS APPROACH

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Abstract

Background: The banking sector has a very important impact on the Indian economy and its importance cannot be overemphasized. The Bank plays the role of mobilizing deposits and disbursing credit to different sectors of the economy. One of the valuations of the banking sector in India is the issue of non-performing loans. The aim of the study was to examine the factors of non-performing loans in the context of the Indian banking sector. To study the NPL factor, the study used factors such as bank and social factors. The specific factors of the bank are the rapid growth of credit, monitoring and evaluation of benefits and risks, while social factors are political intervention and bankers' inefficiency etc.

Objectives: The specific objective of this study was to examine the factors of non-performing loans in the context of the Indian banking sector.

Research Approach/Methodology/Design: The study used research in associations where questionnaires were administered randomly to 200 bank executives in West Bengal. Responses from bank executives were analyzed using frequency tables, graphs and factor analysis..

Originality: This paper is absolutely original in terms of its methodology . The methodology used for this study is absolutely new and pure for our country because no such comprehensive and remarkable study based on primary survey is done earlier.

Findings: The results revealed that the borrowers who were accepted by violating the evaluation conditions, the banks 'knowledge of the customers' previous credit history, good understanding of the loans, and the poor assessment of the risks caused the bad loans. Research also shows that strict loan monitoring has an impact on bad loans. The results also indicate that if the loan is not properly evaluated, it can turn into non-performing loans even if appropriately monitored. The study also showed that interest has a weak relationship with non-performing loans and is not an important factor affecting the former. In addition, the study also revealed that rapid credit growth has a significant impact on non-performing loans. This research shows that because of competition, the terms of loans or the use of high-risk investment options are settled by banks that cause bad loans. Besides the bank's factors, social factors are also identified in this research. The study indicates a strong relationship between bankers' inefficiency and political interference in non-performing loans. This research shows that banks are under pressure under political influence and settling credit conditions that lead to bad loans. Factor analysis showed that there are several factors (Researcher takes twelve factors) affecting non-performing loans in India of which some factors carry the highest factors in loading which means that these twelve factors are the most important. Moreover, research results show that properly trained and qualified bankers increase the quality of loans.

Value Addition: This study may clear the concept of factors of non-performing loans. This innovative work on non-performing loans and its factors will not only help the entire Indian banking sector to control non-performing loans, but it could also be a generalization in other.

Key Words: : Banking sector; RBI, Non-Performing Loans; Bank-Specific Factors; Social factors; India

1.0 Introduction

In contemporary times, the growth and development of a country's economy is dependent on a thriving financial system, of which the banking sector is a key component because of the role it plays in deposit mobilization and credit disbursement to different sectors of the economy. The banking system injects fuel in the economic system in the form of fund flow which impels economic efficiency. Banks by acting as intermediator, play a significant role in the optimal and well-organized allocation of funds of an economy by mobilizing resources for productive activities. The significance of banks is more vital in developing countries because financial markets are generally weak and immature, and banks are usually the main source of finance for the bulk and are usually the main pool of economic savings (Aspal, Dhawan, Nazneen, 2019). Nowadays, Non-Performing Loans is becoming a major challenge for the growth of banking sector.

The IMF defines a loan as nonperforming "when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons—such as a debtor filing for bankruptcy—to doubt that payments will be made in full." (IMF, 2004). By definition, NPL is a simple economic event that occurs between a lender and a borrower in a transaction level. But the Reserve Bank of India (RBI) defines bad loans as assets that stop providing income to the bank. These assets are mostly the credit facility extended by the bank for which the interest amount as well as the principal amount remaining due for more than 90 days from due date. These Non-Performing Assets are divided into Sub-Standard assets, Doubtful assets and Loss Assets. Sub Standard assets are those credits which are for less than or equal to 18 months whereas in case of Doubtful debts the period exceeds 18 months. Loss assets are uncollectible but have a salvage value. Non-Performing Loans arise due to defective lending policies of banks, change in government policies and dynamic transformations of business environment which adversely impact the growth, profit and goodwill of the banking sector.

Non-Performing loans is a global issue for banking sectors however the level of its severity differs from country to country based on policies. According to the 2017 World Bank report, among 262 countries surveyed, 146 countries face NPL risk in which Ukraine foremost in NPL with 54.54% of Bank Non-performing loans to gross loans. China holds the least position in the ranking with 0.23% of Bank Non-performing loans to gross loans. India, with reference to the report held 37th position in the ranking with 9.975% of Bank Non-performing loans to gross loans. Besides, the 2018 RBI annual reports show that NPL levels as a percentage of gross NPLs on total loans, reached 12.2 percent in March of 2018. The estimations related to NPLs levels are not positive as it is expected that there will be further increase in gross NPL percentage. This situation shows the necessity to review the framework and policies of Indian

banking sector (Sowmya, 2019). According to Hassan, Ilyas and Reman (2015) Non-Performing Loans is affected by bank specific and social factors. The bank specific factors are rapid credit growth, monitoring, interest and risk assessment, while the social factors are political interference and bankers' incompetence.

The scenario of Indian banking sector does not indicate a pleasant story. Banks in recent years face the risk of default, which is one of the main reasons for bank failures (Hassan, et al., 2015). The Indian banking sector faces four types of risk. These are market risk, credit risk, liquidity risk and operational risk. The problem arises when borrowers fail to repay loans, leading to increased NPLs and lower profitability (Hassan et al., 2015). Therefore, there is a need to study the factors of Non-Performing Loans in the context of Indian banking sector.

2.0 Literature Review

Sowmya (2019) opined that India's Non-Performing Asset (NPA) chart shows an increasing movement in NPA levels which needed attention. He collected data required for the study through websites, RBI reports, World Bank reports and other secondary data sources too were analysed through charts. The findings revealed the reasons behind the increase of NPA levels and some measures to reduce the same, among which is bank's lending systems and recovery mechanisms need to be revised and improved which is a step by step process.

The impact of bank-specific and macroeconomic factors on the performance of private sector banks in India was explored by Parvesh, Sanjeev, and Afroze (2019). The study used a 7-year panel of 20 private banks between 2008 and 2014. The multiple regression analysis revealed that all the bank's variables (asset quality, management efficiency, profitability and liquidity quality) and variable macroeconomic GDP have significantly affected banks' financial performance. Sample in India excluding Capital Adequacy Ratio (CAR). Also, inflation has a significant statistical effect on ROA. This means that despite the optimal CAR maintained by private banks, other variables related to bank management and governance have had a significant impact on the financial performance of banks.

In Nepal, Seema (2015) conducted a study on the impact of certain macroeconomic variables of banks on non-performing loans of commercial banks. Data were collected for 26 commercial banks collected between 2002 and 2012. The result showed that macroeconomic variables such as the real effective exchange rate have a significant negative impact on non-performing loans. The effect of GDP growth rate was found to be insignificant in this study. The one-year delayed inflation rate has a significant positive impact on non-performing loans. Banks that charge a relatively higher real interest rate have a high performing loan that is inconsistent with the results of previous studies. The dummy of ownership has a positive and significant coefficient of 1 per cent, indicating that if the bank is government-owned, the non-performing loan will be higher than that of the privately owned banks. Moreover, further lending in previous and current years reduces non-performing loans because the loan change coefficient in current and prior years has a negative and significant coefficient of one percent.

Kojo, Abbas and Wang (2018) explored the macroeconomic determinants of non-performing loans in 19 Asian countries (low to high-income economies) using the generalized method for estimating the generalized method for moments based on economic data from 1998 to 2015. The results revealed that non-performing loans in the Asian banking system is dependent on key macroeconomic variables, such as unemployment rate, inflation rate, official exchange rate, remittances and GDP per capita. These associations vary according to the company's income level. The result is that the country's economic level needs careful consideration when designing credit policies to reduce risk in the banking system.

Chavan and Gambacorta (2016) analyzed the behavior of non-performing loans from Indian banks throughout the cycle. It was found that a one percentage point increase in loan growth was associated with a 4.3% increase in NPLs compared to the total long-term loan advances (ratio NPLs), the reaction being stronger during the expansion phases. In addition, banks' non-performing loan ratios have been sensitive to the interest rate environment and the overall growth of the economy. Despite differences in management and governance structures, there is a procyclical response to credit growth for both public and private banks, with private banks responding better to changes in interest rates and economic conditions.

Hassan, Elias and Rahman (2014), focusing on the relationship between bank-specific factors, social factors, and non-performing loans. Quantitative methodology was used. Non-performing loans, the results showed that many of the bank's factors such as credit assessment and the rapid growth of credit have a significant impact on non-performing

loans. Social factors Political intervention and bankers' inefficiency have had a significant impact on non-performing loans and are therefore important factors in explaining non-performing loans.

Prasana, Thenmozhi, and Rana (2014) investigated the NPA determinants in the Indian banking system with the help of panel data modeling. A data set of 31 totals from 2000 to 2012 totaling 372 fixed years. The results indicated that macroeconomic variables had a greater impact on the overall NPA ratio than the NNPA ratio. This is because NNPA depends on the NPA provisions set by the bank. Among the macroeconomic variables of GDP, construction spending, growth in per capita income, foreign exchange reserves, stock index and volatility have a significant inverse relationship with NPA ratios. This means that economic growth coupled with positive growth and market growth should not decline in the future.

Peyavali and Sheefeni (2015) examined the macroeconomic determinants of non-performing loans in Namibia. The study was based on quarterly data covering the period 2001: first quarter to 2014: second quarter, using unit root, coherence, causality of Granger, impulse response and decomposition techniques. The expected error variance. The results of the joint integration revealed a long-term relationship between non-performing loans and the record of domestic products, interest rate and inflation rate. According to Granger's causal standards, there is one-way causality ranging from interest rate to long-term non-performing loans. In addition, there is also a one-way causality from all determinants of macroeconomic to short-term non-performing loans. The results of the DRRs revealed that all macroeconomic determinants play a role in determining non-performing loans, while the GDP and exchange rate record remains only in the short term.

3.0 Methodology

In this section the method of collection analysis of data on the impact of factors of Non-Performing Loans in Indian Banking Sector were specified.

The study made use of associational research, which is basically concerned with examining the relationship between variables. The study randomly selected bank managers from public and private banks of West Bengal (India), who have had experience of more than five years, as unit of analysis. The justification for the selection criteria is that with a minimum five years' experience, the participating bankers for the research have a good understanding about Non-Performing Loans and its various factors. The main reason for selecting West Bengal is that almost all major banks have their branches in it. This study considers top 12 banks on the basis of their assets allocation as per report of Reserve Bank of India. 200 randomly selected bank managers and other credit officers were selected. Questionnaire administration is the best way of collecting data from a large population (Babbie, 2001). The data collected were analysed with aid of frequency tables and charts.

In the questionnaire, items 12 to 16 represents rapid credit growth, items 5 to 8 represents monitoring, items 9 to 11 represents interest, items 1-4 represents risk assessment, items 17 to 20 represents political interference and items 21 to 25 represents bankers' incompetence.

4.0 Data Analysis and Results

This section presents results relating to the factors affecting the Non-Performing Loans. This chapter tries to show the results of the survey conducted.

4.1 Survey Results

Out of 200 questionnaires administered, 184 were returned completed, which gave a response rate of about 92%.

4.1.1 Demographic Characteristics of the Respondents

The demographic characteristics of the respondents is presented in Table 4.1 below:

Table 4.1. Employment of Respondents.

	Frequency	Percent
Gender		
Male	150	81.3
Female	34	18.7
Year of Experience		
Less than 1 year	-	-
1-5 years	44	23.7
6-10 years	38	20.9
11-15 years	54	28.8
Above 15 years	48	26.6
Education Qualification		
MPhil/ PHD	8	4.3
Master Degree	52	28.3
Bachelor Degree	106	57.6
Others	18	9.8

Source: Field Survey, 2019

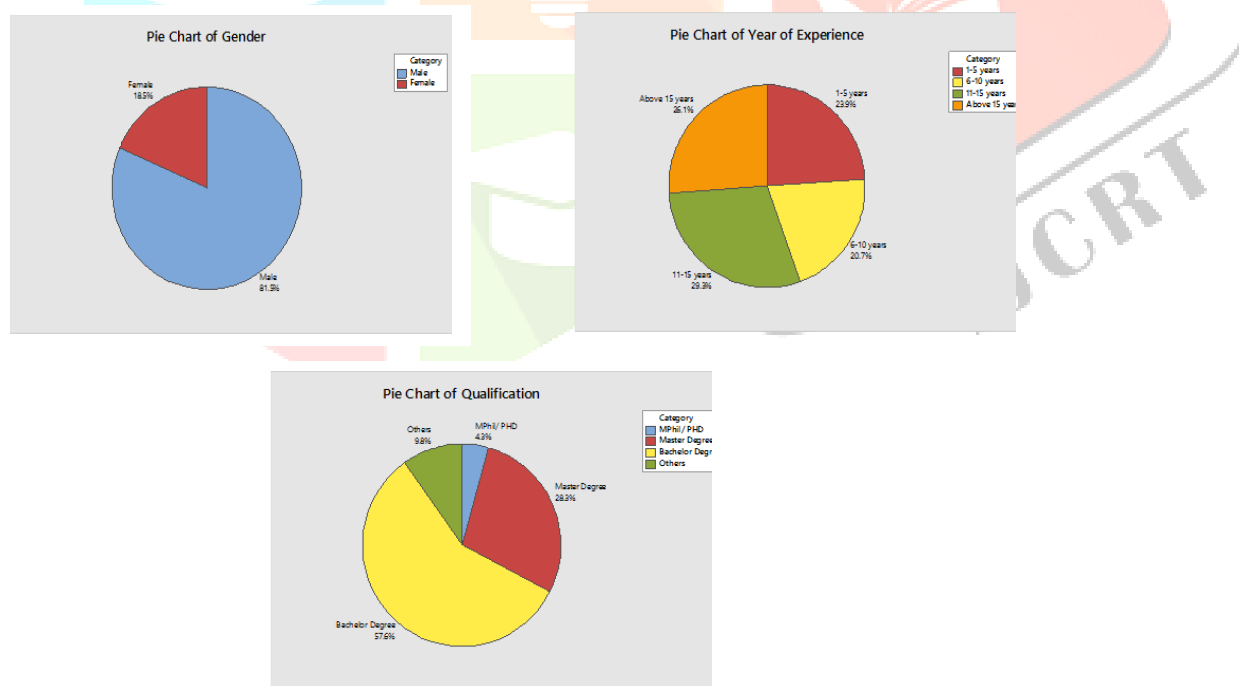


Fig. 1 Pie chart of gender, years of experience and qualification

From the 184 returned responses, 81.3% were male and 18.7% were female. This reveals that the credit departments of most of the banks are male dominated. This probably implies that the banks prefer male staff while giving jobs related to loan advancement.

Table 4.1 showed that 28.8% of the respondents had 11-15 years of banking experience. 26.6% have above 15 years of banking experience, 20.9% have between 6 and 10 year banking experience. 23.7% have between 1 and 5 years banking experience. This implies that respondents had vast experience in the banking sector. The table also revealed that almost majority of the respondents are highly qualified.

4.1.2 Factors affecting the Non-Performing Loans

The objective of this study was to investigate the factors affecting the Non-Performing Loans in India. Respondents were to agree or disagree to statements which relates to factors of Non-Performing Loans. Table 4.2 depict the responses on the factors affecting Non-Performing Loans.

Table 4.2, Factors affecting NPLs.

Factors	Strongly Agree (%)	Agree (%)	Neutral/Indifferent (%)	Disagree (%)	Strongly Disagree (%)
Do you agree that the borrowers, which are admitted by compromising the assessment conditions usually default?	39.6	48.2	5.0	2.1	5.1
Do you agree that knowledge of the customers' credit history, will lead to high loans payment?	39.9	60.1	-	-	-
Do you agree that a clear understanding the loan details will ensure less loan default?	31.4	49.9	6.7	12.0	-
Do you agree that loan default can be as a result of poor risk assessment?	32.4	56.1	-	11.5	-
Do you agree that loan performance can be improved if there is strict monitoring of loans?	31.2	56.4	3.1	9.3	-
Do you agree that default in loans can be reduced if there is proper monitoring of weak loans?	-	11.5	2.3	36.0	50.2
Do you agree that there is a relationship between credit monitoring and the occurrence of NPLs?	38.4	46.3	5.8	9.5	-
Do you agree that NPLs can be reduced if banks expend more on credit monitoring?	30.2	40.3	2.3	18.0	9.2
Do you agree that loans interest can lead to NPL?	7.8	16.5	8.2	42.4	25.3
Do you agree that high interest rates charged on loans can lead to loan default?	26.6	38.1	8.7	10.7	16.6
Do you agree that loan performance is affected by interest charged on loans?	21.5	58.2	2.2	13.5	4.6
Do you agree that higher NPLs can be as a result of aggression in giving loans?	42.9	54.4	-	2.7	-
Do you agree that rapid advancement of credit can lead to high NPLs?	48.6	46.7	4.7	-	-
Do you agree that default of loans can occur if integrity in lending is compromised?	35.2	53.3	5.1	6.4	-
Do you agree that there a high chance of NPLs if loan is given to a large number of borrowers?	33.5	53.7	-	12.8	-
Do you agree that an increase in NPLs is a result of greater risk carried out by the banks?	42.9	54.5	-	2.6	-
Do you agree that the increase in NPLs in India is as a result of political interference?	40.0	50.8	5.1	4.1	-
Do you agree that NPLs can be as a result of politically exposed bank official who are ready to give credit facilities without adequate requirements?	30.8	51.4	10.4	3.7	3.7

Do you agree that NPLs in India is as a result of strategic planning without considering the business environment?	20.6	50.0	7.1	13.3	9.0
Do you agree that NPLs in India is as a result disbursement of loans to politicians under political pressure?	58.3	21.7	3.9	6.6	9.5
Do you agree that in making wise loaning decisions lending, the qualification of officer is key?	51.1	30.2	10.1	8.6	-
Do you agree that in making wise loaning decisions, the experience in the service and lending matter is important?	57.9	40.6	1.5	-	-
Do you agree that in making wise loaning decisions, the training and professional grooming is important?	36.5	50.8	5.8	6.9	-
Do you agree that in making wise loaning decisions, lending officer should be groomed in good supervision and trained well?	51.7	40.8	2.1	2.7	2.7
Do you agree that in making wise loaning decisions, manager's capability to withstand pressure from customer and higher authorities plays an important role?	53.1	35.3	5.1	6.5	-

Source: Field Survey, 2019

Table 4.2 indicates that 87.8% respondents agree that the borrowers admitted compromising the assessment conditions becomes one of the reasons for occurrence of Non-Performing Loans. 91.5% of respondents agree that if the bank have the knowledge of the customers' credit history, it will lead to high loans payment. 88% of respondents agree that clear understanding the loan details will ensure less loan default.

From the table, 87.6% of the respondents acknowledge that loan performance can be improved if there is strict monitoring of loans. 90.5% of the respondents agree relationship between credit monitoring and the occurrence of NPLs and this imply that credit monitoring is directly related to the performance of loans. The above table shows that 24.3% of the respondents acknowledge that loans interest can lead to NPL while 64.7% of the respondents affirm that high interest rates charged on loans can lead to loan default. This implies that there is strong relationship between interest and NPLs. In the same vein, the table also showed that 95.9% of respondents strongly agree that increase in NPLs in India is as a result of political interference. Furthermore, 92.6% of respondents agree that NPLs can be as a result of politically exposed bank official who are ready to give credit facilities without adequate requirements. On bankers' incompetence 93.5% of the respondents believe that in making wise loaning decisions, manager's capability to withstand pressure from customer and higher authorities plays an important role.

The items in the questionnaire were tested for internal consistency reliability. The table shows the reliability statistics.

Table 4.3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.644	.649	25

Sources: SPSS output

The internal consistency reliability condition was satisfied based on the Cronbach's Alpha value of 0.644 obtained from Table 4.3.

Factor analysis can be best described as a tool to help identify the underlying factors that might explain the dimensions associated in large data variability. In this study, factor analysis is used to construct the

new factors affecting non-performing loans. Bartlett's test of Sphericity is based on chi-square transformation of the determinant of correlation matrix. A KMO test was performed to determine whether the data is suitable for factor analysis. Bartlett's sphericity test and Kaiser-Meyer-Olkin sampling relevance measurement are two tests that can be used to determine the factorability of the matrix as a whole. It is an index to examine the appropriateness of factor analysis. High values between 0.5 and 1.0 indicate factor analysis is appropriate. Values below 0.5 imply that factor analysis may not be appropriate. Below is the table for KMO and Bartlett's test.

Table 4.4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	289.667
	df	300
	Sig.	.005

Sources: SPSS output

From the table, the Bartlett's Test of Sphericity is statistically significant with $p < 0.05$. This indicates that there are significant number of correlations among the variables (Approx. chi-square = 289.667, degree of freedom = 300, significance = .005). In the same vein, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.698, which is greater than 0.6 and value greater than 0.6 indicates a strong sampling adequacy of all the items used. Both KMO measure and the Bartlett's Test of Sphericity indicates that factorability is assumed. It is observed that KMO being 0.698 indicates that there is no error in 69.8% of the items and in the residual 30.2%, there may be some sort of error.

To decide how many factors, we need to represent the data, we use 2 statistical criteria: the eigenvalues and the scree diagram. The determination of the number of factors is usually done by considering only factors with Eigen values greater than 1. Factors with a variance of less than 1 are no better than one variable because each variable should have a variance of 1.

The eigenvalue represents the total variance explained by each factor, the percentage of the total variance attributed to each factor. Principal component analysis is one of the popular methods used in factor analysis, where the total variance in the data is considered to determine the minimum number of factors that will account for maximum variance of data depicted. Table below shows the total variance explained.

Table 4.5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.000	8.001	8.001	2.000	8.001	8.001
2	1.786	7.144	15.145	1.786	7.144	15.145
3	1.698	6.793	21.938	1.698	6.793	21.938
4	1.627	6.508	28.446	1.627	6.508	28.446
5	1.546	6.185	34.630	1.546	6.185	34.630
6	1.497	5.986	40.617	1.497	5.986	40.617
7	1.422	5.688	46.305	1.422	5.688	46.305
8	1.323	5.293	51.599	1.323	5.293	51.599
9	1.181	4.724	56.322	1.181	4.724	56.322
10	1.110	4.439	60.761	1.110	4.439	60.761
11	1.095	4.379	65.140	1.095	4.379	65.140
12	1.052	4.208	69.348	1.052	4.208	69.348
13	.926	3.704	73.052			
14	.855	3.420	76.472			
15	.781	3.123	79.596			
16	.739	2.956	82.552			
17	.702	2.806	85.358			
18	.636	2.544	87.902			
19	.571	2.283	90.185			
20	.520	2.079	92.264			
21	.503	2.013	94.277			
22	.489	1.955	96.233			
23	.365	1.461	97.694			
24	.316	1.266	98.960			
25	.260	1.040	100.000			

Sources: SPSS output

From the table above, it shows the actual factors that were extracted. Taking a look at the section labeled “Extraction Sums of Squared Loadings,” it shows only those factors that met the cut-off criterion (extraction method). In this case, there were twelve factors with Eigen values greater than 1. The “% of variance” column tells how much of the total variability (in all of the variables together) can be accounted for by each of these summary scales or factors. Factor 1 accounts for 8.001% of the variability in all 25 variables, and so on.

For extracting factors, Principal Component Analysis was used. Latent Root Criterion (factors with Eigen value greater than 1) was used for finalizing the number of factors. This reveals that from the 25 items affecting non-performing loans included in the factor analysis, only 12 dimensions were extracted; therefore, 12 factors have been taken depending on Eigen values and variance explained by each factor emerged with a cumulative variance of 69.3 percent. This indicated that 12 dimensions explained 69.3 percent variance of the bank executives' perception of non-performing loans.

The examination of the Scree plot provides a visual of the total variance associated with each factor. The steep slope shows the large factors. The gradual trailing off (scree) shows the rest of the factors usually lower than an Eigen value of 1. In choosing the number of factors, in addition to the statistical criteria, one should make initial decisions based on conceptual and theoretical grounds.

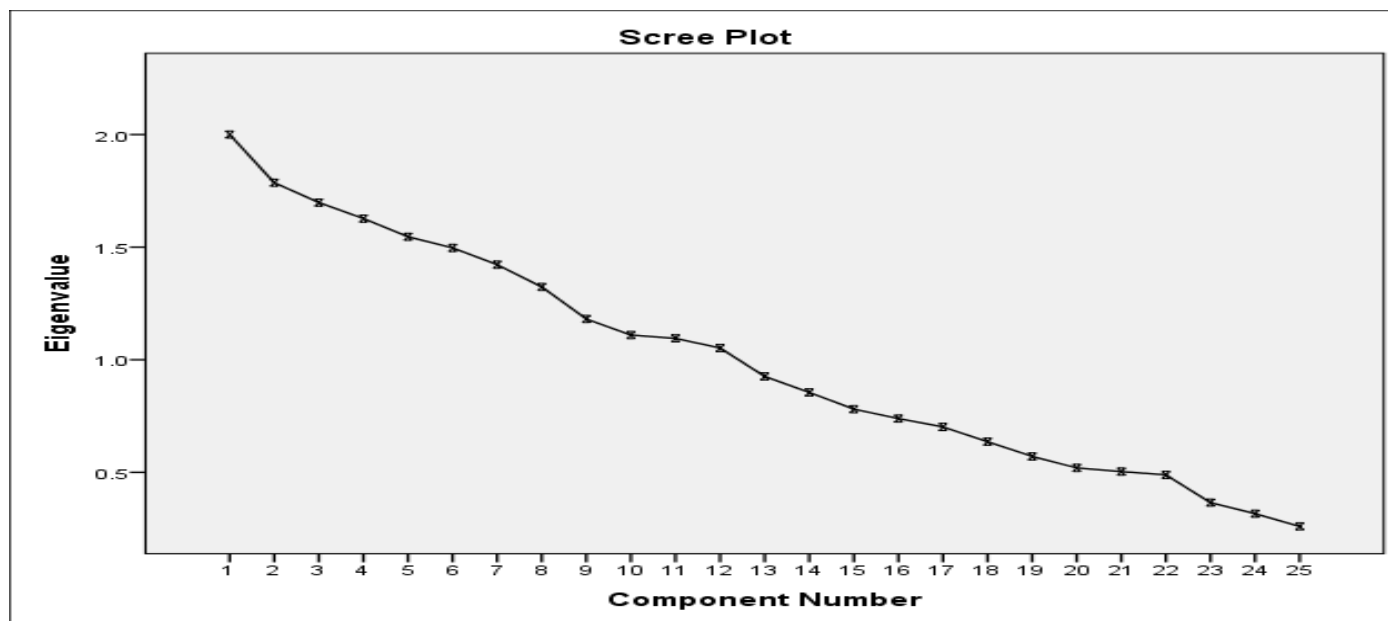


Fig. 2: Scree Plot

5.0 Conclusion

The objective of this study was to determine the factors of NPLs. To achieve the objective, the study applied quantitative research approach. The results revealed the following factors affecting the occurrence of Non-Performing Loans (NPLs) in Indian banking sector:

The study found that admitting borrowers by compromising valuation terms, banks 'knowledge of clients' credit history, a good understanding of loans, and a poor risk assessment had an impact on nonperforming loans. Research also shows that strict loan tracking has an impact on non-performing loans. The results also indicate that if a loan is not properly valued, it can turn into unproductive loans even if it is followed up appropriately. The study also explained that interest had a weak relationship with NPLs and not an important factor affecting the former. In addition, the study also reveals that rapid credit growth has a significant impact on nonperforming loans. This study shows that because of competition, loan conditions are being compromised or banks using nonperforming loans are using riskier investment options.

In addition to bank-specific factors, social factors are also identified in this research. The study indicates a close relationship between bankers' incompetence and political interference in NPL. This study shows that banks are under pressure under political influence and undermine credit conditions leading to NPLs. In addition, research findings show that properly trained and qualified bankers improve the quality of loans.

The factors that appeared in the questionnaire for the collection of responses were tested for internal reliability using Cronbach's alpha, which indicates the average correlation between the elements of each of the factors. Factors resulting in a Cronbach alpha greater than or equal to 0.644 are generally considered reliable and therefore useful for further analysis as part of a specific variable. Cronbach's alpha results are shown in the table below.

Factor analysis is the procedure that has always been used by researchers to organize, identify and minimize large items of the questionnaire to some built under a dependent variable in a search. Here, factor analysis is used to

construct new factors affecting the perception of non-performing loans from Indian banks. Bartlett's sphericity test is based on the chi-square transformation of the determinant of the correlation matrix. A KMO test was performed to determine whether the data is suitable for factor analysis. Bartlett's sphericity test and Kaiser-Meyer-Olkin sampling relevance measurement are two tests that can be used to determine the factorability of the matrix as a whole. This is an index to examine the relevance of the factor analysis. High values between 0.5 and 1.0 indicate that the factor analysis is appropriate. Values less than 0.5 imply that the factor analysis may not be appropriate.

The value of Bartlett's sphericity test results is significant ($p < 0.001$, $p = 0.005$). It showed a statistically significant number of correlations between variables (approximate chi-square = 289.667, degree of freedom = 300, meaning = 0.005). In addition, the measure of the relevance of Kaiser-Meyer-Olkin sampling is 0.698, which is greater than 0.6, indicating a high sampling adequacy of all selected statements in the factor analysis. The factor analysis performed is also significant since $p = 0.000$. It is suggested that if Bartlett's sphericity test is significant and the Kaiser-Meyer-Olkin measurement is greater than 0.6, factorability is assumed. It is observed that KMO being 0.698 indicates that there is no error in 69.8% of the sample and in the remaining 30.2% there may be some kind of error. Bartlett's sphericity test indicates that the power of the relationship between the variables is strong. It refers to the good idea of developing a factor analysis for the data. Thus, on the basis of the results, a factor analysis should be carried out to examine the factors that affect managers' perception of non-performing loans from Indian banks.

From the perception of the bank executives, factor analysis suggests that there are several factors affecting the non-performing loans in India. These factors respectively carry the highest factors loading which means these twelve factors are most important.

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