

# Non-Performing Assets in Public and Private Sector Banks in Arunachal Pradesh: An Empirical Study

Karbar Riba<sup>1</sup>, Debajyoti Sarkar<sup>2</sup>

<sup>1</sup>Research Scholar, Department Commerce, Rajiv Gandhi University, Arunachal Pradesh, India  
ORCID ID: 0009-0000-3476-1834

<sup>2</sup>Research Scholar, Department of Commerce, Rajiv Gandhi University, Arunachal Pradesh, India  
ORCID ID: 0009-0003-3171-7207

Corresponding Author: Debajyoti Sarkar

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## ABSTRACT

Non-Performing Assets (NPAs) constitute a major challenge to the financial soundness, profitability, and operational efficiency of the banking sector in India. The persistence of NPAs adversely affects banks' asset quality, constrains credit expansion, and poses risks to overall financial stability. This study presents an empirical examination of the nature and extent of NPAs in public sector and private sector banks operating in Arunachal Pradesh, a geographically and economically distinctive state in the North-Eastern region of the country. The research adopts a comparative analytical perspective to assess variations in NPA levels, recovery performance, and credit appraisal practices across the two categories of banks. The findings indicate significant differences in asset quality and NPA management between public and private sector banks. Public sector banks are observed to exhibit relatively higher levels of NPAs, which may be attributed to their broader developmental responsibilities, higher exposure to priority sector lending, and structural limitations in credit monitoring and recovery mechanisms. In contrast, private sector banks demonstrate comparatively stronger credit appraisal standards and more effective post-sanction monitoring, resulting in better asset quality outcomes. The study also emphasises the

influence of institutional and operational factors on the accumulation of NPAs. The analysis highlights the necessity of strengthening credit risk management frameworks, particularly within public sector banks, through improved appraisal procedures, enhanced monitoring systems, and timely recovery strategies. Given the unique socio-economic and geographical context of Arunachal Pradesh, the study underscores the importance of region-specific banking approaches to ensure sustainable credit growth, financial inclusion, and long-term stability of the banking system.

**Keywords:** *Non-Performing Assets, Public Sector Banks, Private Sector Banks, Credit Risk Management, Banking Performance.*

## 1. INTRODUCTION

The banking sector plays a pivotal role in the economic development of a country by mobilizing savings, facilitating capital formation, and ensuring the efficient allocation of financial resources. A stable and well-functioning banking system is essential for sustaining economic growth, promoting financial inclusion, and supporting productive investment. However, the effectiveness of the banking system is significantly influenced by the quality of its assets, particularly its loan portfolio. One of

the most persistent challenges faced by banks in India is the problem of Non-Performing Assets (NPAs), which has emerged as a critical concern for policymakers, regulators, and banking institutions alike. Non-Performing Assets represent loans or advances that cease to generate income for banks due to non-payment of interest and/or principal for a specified period. The accumulation of NPAs adversely affects banks' profitability, liquidity position, and capital adequacy, thereby undermining their lending capacity and financial resilience. High levels of NPAs not only weaken individual banks but also pose systemic risks to the overall financial system. Consequently, the management of NPAs has become a central issue in the discourse on banking sector reforms and financial stability in India. In the Indian banking landscape, public sector banks and private sector banks differ significantly in terms of ownership structure, operational objectives, governance mechanisms, and risk management practices. Public sector banks, which are majority-owned by the Government of India, have traditionally played a developmental role by extending credit to priority sectors such as agriculture, micro and small enterprises, and weaker sections of society. While this mandate supports inclusive growth, it also exposes public sector banks to higher credit risk, especially in regions with structural and economic vulnerabilities. Private sector banks, on the other hand, operate primarily on commercial considerations, often emphasizing profitability, efficiency, and stringent credit appraisal norms.

The issue of NPAs has been more pronounced in public sector banks compared to private sector banks over the years. Several factors contribute to this divergence, including differences in credit appraisal standards, monitoring mechanisms, recovery strategies, and institutional accountability. While private sector banks generally adopt technology-driven monitoring systems and risk-based lending practices, public sector banks often face constraints arising from procedural rigidity, manpower limitations,

and socio-political considerations. These structural differences make a comparative analysis of NPAs between public and private sector banks both relevant and necessary. The regional dimension of NPAs adds another layer of complexity to the issue. Arunachal Pradesh, located in the North-Eastern region of India, presents a unique banking environment shaped by its geographical remoteness, difficult terrain, sparse population, limited industrial base, and heavy reliance on agriculture and allied activities. Banking operations in the state are often challenged by poor connectivity, limited financial awareness, and difficulties in loan monitoring and recovery. As a result, the behavior and performance of NPAs in this region may differ from national trends, necessitating focused empirical investigation. Despite the strategic importance of the North-Eastern states, there exists a relative paucity of empirical studies examining banking performance and asset quality at the state level, particularly in Arunachal Pradesh. Most existing research on NPAs in India adopts a national or bank-level perspective, with limited attention to region-specific dynamics. This gap in the literature underscores the need for localized studies that account for regional economic conditions, institutional challenges, and banking practices. A state-level analysis can provide more nuanced insights into the causes and management of NPAs and help design context-specific policy interventions. From a policy perspective, understanding NPAs in Arunachal Pradesh is particularly important given the emphasis on financial inclusion, infrastructure development, and economic integration of the North-Eastern region with the national economy. Banks are expected to play a catalytic role in supporting entrepreneurship, small businesses, and agricultural development in the state. However, persistent NPAs can discourage banks from extending fresh credit, thereby limiting economic opportunities. Therefore, effective NPA management is essential not only for banking stability but also for regional development. By comparing public

and private sector banks, the study highlights institutional strengths and weaknesses and provides insights into best practices that can be adopted to improve asset quality. The findings are expected to be useful for bank

managers, policymakers, and regulators in designing strategies to mitigate NPAs and enhance banking performance in Arunachal Pradesh.

**Table 1.1.: Key Differences Between Public and Private Sector Banks in the Context of Non-Performing Assets**

Dimension	Public Sector Banks	Private Sector Banks
Ownership Structure	Majority ownership vested with the Government, resulting in public accountability and policy-driven objectives.	Owned and managed by private entities with a primary focus on shareholder value.
Lending Orientation	Emphasis on developmental banking with substantial exposure to priority sector lending.	Predominantly commercial orientation with selective exposure to priority sectors.
Credit Appraisal Process	Largely standardized and procedural, with limited flexibility in risk assessment.	More rigorous, flexible, and risk-based appraisal mechanisms.
Risk Management Practices	Relatively constrained by institutional rigidities and legacy systems.	Advanced risk management frameworks supported by technology and analytics.
Post-Sanction Monitoring	Often affected by manpower constraints and delayed follow-up.	Continuous and technology-driven monitoring of loan accounts.
Recovery and Resolution Mechanisms	Heavily reliant on legal and institutional recovery channels.	Proactive recovery strategies with early intervention mechanisms.
Exposure to NPAs	Generally higher due to social obligations and broader lending mandates.	Comparatively lower owing to selective lending and stricter controls.
Operational Flexibility	Limited flexibility due to regulatory and administrative procedures.	Greater operational autonomy and managerial discretion.

Source: Compiled by the researchers

## 1.2. Conceptual Framework and Definition of Non-Performing Assets

The concept of Non-Performing Assets (NPAs) occupies a central position in the analysis of banking performance and financial stability. Asset quality is widely regarded as a key indicator of the soundness of the banking system, and NPAs represent a direct measure of credit risk exposure faced by banks. The persistence of NPAs not only affects individual banks but also has broader implications for economic growth, financial intermediation, and systemic stability.

### 1.2.1. Definition of Non-Performing Assets

In India, the definition and classification of NPAs are governed by the prudential norms prescribed by the Reserve Bank of India (RBI). In line with international best practices, the RBI adopted the 90-days overdue norm for the identification of NPAs. Under this framework, a loan or advance is

classified as a Non-Performing Asset when the interest and/or principal remains overdue for a period exceeding 90 days in the case of term loans. Similar criteria apply to other forms of credit, such as overdrafts and cash credit facilities, where an account is treated as non-performing if it remains out of order for more than 90 days. The adoption of the 90-days norm marked a significant shift in India's banking regulation, enhancing transparency and improving the accuracy of asset quality assessment. By aligning domestic banking practices with global standards, the RBI sought to strengthen credit discipline and ensure early recognition of stress in loan portfolios. Timely identification of NPAs enables banks to initiate corrective measures, such as restructuring, recovery, or provisioning, thereby limiting potential losses.

### 1.2.2. Conceptual Framework of NPAs

NPAs are the outcome of multiple interrelated factors operating at both the institutional and contextual levels. At the institutional level, the quality of credit appraisal, effectiveness of post-sanction monitoring, and efficiency of recovery mechanisms play a decisive role in determining the likelihood of loan default. Weaknesses at any stage of the credit lifecycle can increase the probability of an asset becoming non-performing. At the contextual level, broader institutional and

regional factors, such as economic conditions, borrower characteristics, market accessibility, and levels of financial awareness, significantly influence repayment behavior. In geographically challenging and economically underdeveloped regions, these factors tend to amplify credit risk and complicate monitoring and recovery efforts. The conceptual framework of the study, therefore, views NPAs as a function of both internal banking practices and external environmental conditions.

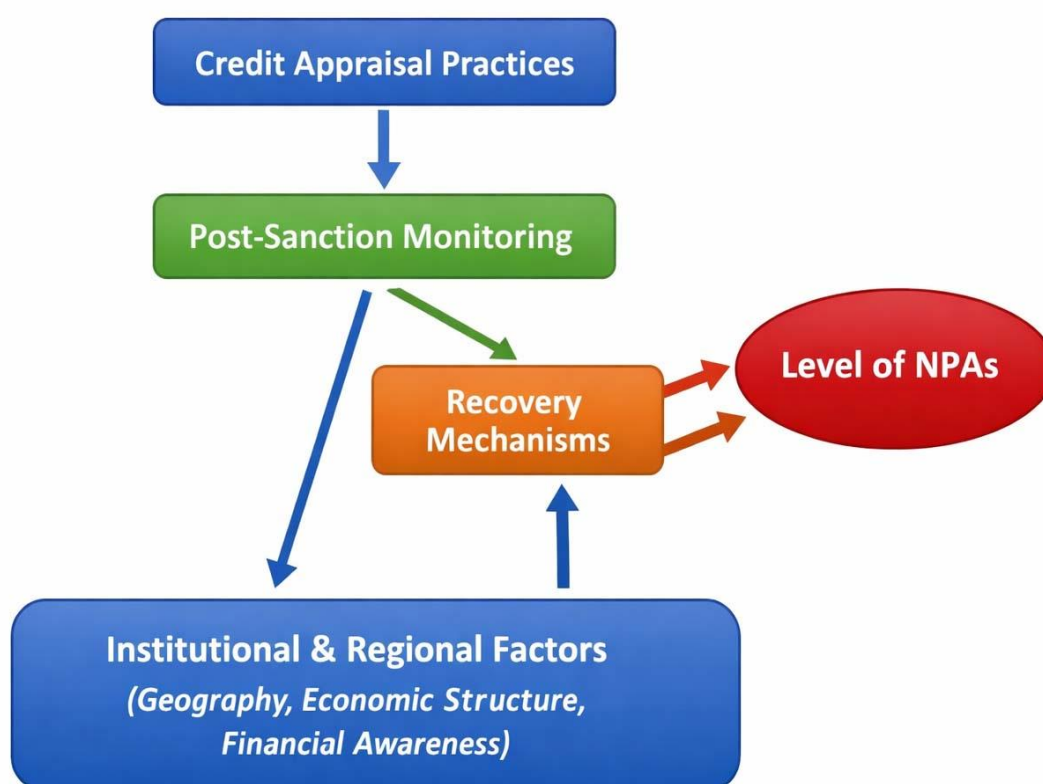


Figure 1.1: Conceptual Framework of NPAs

The key factors influencing the level of Non-Performing Assets (NPAs) in banks and the relationships among them. It identifies credit appraisal practices as the initial determinant, reflecting the quality of borrower assessment and loan sanctioning. Effective appraisal practices are shown to influence post-sanction monitoring, which represents the continuous supervision of loan accounts after disbursement. Post-sanction monitoring occupies a central position in the framework

and directly affects the functioning of recovery mechanisms, which include follow-up actions and loan recovery processes. Both monitoring and recovery mechanisms are shown to have a direct impact on the level of NPAs, indicating that weaknesses at these stages increase the likelihood of loan defaults. The framework also incorporates institutional and regional factors, such as geographical conditions, economic structure, and financial awareness, as moderating

variables. These factors influence the effectiveness of monitoring and recovery processes, particularly in regionally challenging environments. Overall, the framework emphasizes that NPAs arise from the interaction of internal banking practices and external contextual factors, providing a structured basis for analyzing variations in NPA levels across banks.

### **1.2.3. Importance and Impact of NPAs**

The presence of NPAs has far-reaching consequences for banks and the economy. One of the most immediate effects is on profitability. When loans become non-performing, interest income ceases to accrue or becomes unrealizable. At the same time, banks are required to make provisions against such assets, which directly reduces net profits. Persistent NPAs thus weaken banks' earnings capacity and operational efficiency. NPAs also have a significant capital impact. Higher credit losses and provisioning requirements erode banks' capital base, adversely affecting capital adequacy ratios. A weakened capital position reduces the resilience of banks to future shocks and may necessitate external capital infusion, particularly in the case of public sector banks. NPAs adversely affect the credit channel of the economy. Elevated levels of NPAs increase risk aversion among banks, leading to tighter lending standards and reduced credit flow. This constraint is especially pronounced in development-focused and economically weaker regions, where access to institutional credit is crucial for growth and financial inclusion. As a result, high NPAs can create a vicious cycle of reduced lending, lower investment, and slower economic development.

## **2. REVIEW OF LITERATURE**

The issue of Non-Performing Assets (NPAs) has emerged as a critical concern in banking literature due to its far-reaching implications for financial stability, credit allocation, and economic growth. NPAs are widely regarded as a key indicator of asset quality and credit risk management efficiency in banks. Over

the years, researchers have examined NPAs from diverse perspectives, including comparative performance of bank groups, determinants of NPAs, impact on profitability and capital adequacy, and the effectiveness of regulatory and institutional mechanisms. This section presents a thematic and empirical review of major studies relevant to the present research.

### **2.1. Evolution and Conceptual Understanding of NPAs**

The academic discourse on NPAs in India gained prominence following the banking sector reforms of the early 1990s. The Narasimham Committee (1991) emphasized the need for prudential norms related to income recognition, asset classification, and provisioning to improve transparency and efficiency in Indian banking. The subsequent adoption of the 90-days overdue norm by the Reserve Bank of India aligned Indian banking practices with international standards (Reserve Bank of India [RBI], 2023). Several studies highlight that delayed recognition of stressed assets aggravates credit risk and weakens financial institutions. Ghosh (2015) argues that early identification and classification of NPAs are essential to prevent erosion of asset quality. Similarly, Das and Ghosh (2007) contend that ineffective monitoring and delayed corrective action significantly contribute to the accumulation of NPAs, particularly in state-owned banks.

### **2.2. Comparative Studies on NPAs in Public and Private Sector Banks**

A substantial body of literature consistently reports higher NPAs in public sector banks (PSBs) compared to private sector banks (PVBs). Rani (2022) finds that PSBs exhibit higher gross and net NPA ratios due to priority sector obligations, social lending pressures, and institutional rigidities. In contrast, private sector banks benefit from stronger governance mechanisms, flexible operational structures, and technology-enabled credit appraisal systems. Kaur and Singh (2019) observe that private sector

banks maintain lower NPAs due to conservative lending policies and proactive recovery strategies. Similar findings are reported by Goyal and Joshi (2011), who note that private banks emphasize profitability and risk containment, whereas public banks often balance commercial objectives with developmental mandates. International evidence also supports the view that ownership structure influences asset quality, with state-owned banks facing greater agency and governance challenges (Berger & DeYoung, 1997).

### 2.3. Determinants of NPAs

The literature identifies both internal and external determinants of NPAs. Bank-specific factors such as weak credit appraisal, inadequate post-sanction monitoring, poor risk assessment, and inefficient recovery mechanisms are widely recognized contributors (Das & Ghosh, 2007). Klein (2013) demonstrates that macroeconomic variables, including GDP growth and unemployment, significantly affect asset quality across banking systems. Bhattacharya and Sivasubramanian (2020) highlight that rapid credit expansion without adequate risk controls increases default probability. Studies also emphasize that priority sector lending, though essential for inclusive growth, carries higher default risk, particularly in economically weaker regions (RBI, 2023).

### 2.4. Impact of NPAs on Bank Performance

A dominant theme in the literature concerns the adverse impact of NPAs on bank performance. Numerous empirical studies establish a negative relationship between NPAs and profitability indicators such as

Return on Assets (ROA) and Net Interest Margin (NIM). Sharma and Gounder (2012) find that rising NPAs increase provisioning requirements, reduce interest income, and weaken capital adequacy. High NPAs constrain banks' lending capacity, leading to credit contraction and slower economic growth. Acharya and Kulkarni (2021) argue that persistent NPAs impair financial intermediation and necessitate government recapitalization, particularly in public sector banks.

### 2.5. Regulatory and Institutional Responses

Regulatory reforms such as the SARFAESI Act and the Insolvency and Bankruptcy Code (IBC) have been widely discussed in the literature as mechanisms for improving NPA resolution. Studies indicate that these frameworks have enhanced recovery rates and strengthened creditor rights, although their effectiveness varies across bank groups (Acharya & Kulkarni, 2021). Public sector banks often face procedural delays and institutional constraints, while private banks demonstrate greater efficiency in leveraging these mechanisms (Ghosh, 2015).

### 2.6. Regional and Context-Specific Studies

Despite extensive national-level research, region-specific studies remain limited. Sarma and Pais (2011) emphasize that geographical challenges, low financial literacy, and weak market linkages exacerbate credit risk in underdeveloped regions. The scarcity of empirical studies focusing on North-Eastern states such as Arunachal Pradesh represents a significant gap in existing literature.

**Table 2.1.: Summary of Empirical Studies on Non-Performing Assets in Indian Banks**

Author(s)	Year	Objective of the Study	Data / Methodology	Major Findings
Narasimham Committee	1991	To examine structural weaknesses in the Indian banking system	Committee report and policy review	Recommended prudential norms, asset classification, and provisioning to improve asset quality
Berger & DeYoung	1997	To analyze the relationship between	Econometric analysis of commercial banks	Inefficient banks tend to experience higher problem loans

		bank efficiency and problem loans		
Das & Ghosh	2007	To identify determinants of credit risk in Indian banks	Panel regression analysis	Weak credit appraisal and monitoring significantly increase NPAs
Goyal & Joshi	2011	To study ethical and operational issues in Indian banking	Comparative analysis	Private banks demonstrate superior risk management practices
Sarma & Pais	2011	To assess financial inclusion and banking development	Index-based empirical analysis	Regional and institutional factors influence banking outcomes
Sharma & Gounder	2012	To examine the impact of NPAs on bank profitability	Regression analysis	NPAs negatively affect profitability and capital adequacy
Klein	2013	To analyze macroeconomic determinants of NPAs	Cross-country panel data analysis	Economic growth is inversely related to NPA levels
Ghosh	2015	To evaluate banking reforms and credit risk	Time-series analysis	Regulatory reforms improved asset quality over time
Kaur & Singh	2019	To compare NPAs in public and private sector banks	Ratio analysis	Public sector banks report higher NPAs than private banks
Bhattacharya & Sivasubramanian	2020	To study the relationship between credit growth and asset quality	Econometric modeling	Rapid credit expansion increases default risk
Acharya & Kulkarni	2021	To evaluate the effectiveness of the IBC in NPA resolution	Policy and institutional analysis	Insolvency reforms improved recovery mechanisms
Rani	2022	To conduct a comparative analysis of NPAs in Indian banks	Descriptive and analytical methods	Public sector banks exhibit higher NPA levels
Reserve Bank of India	2023	To analyze trends in Indian banking	Official annual report	Priority sector lending contributes significantly to NPAs

Source: Compiled by the researchers

## 2.7. Research Gap

The literature review reveals several important gaps. First, most studies rely on national-level or aggregated bank data, providing limited insight into state-specific NPA dynamics, particularly in geographically distinct regions such as Arunachal Pradesh. Second, while differences between public and private sector banks are well documented, limited research

explicitly links credit appraisal, monitoring, and recovery practices to NPA outcomes in regional contexts. Third, there is insufficient integration of institutional and regional factors in comparative NPA analysis. These gaps underscore the need for a focused empirical study on NPAs in public and private sector banks operating in Arunachal Pradesh.

Table 2.2: Summary of Research Gaps Identified from the Literature on NPAs

S. No.	Identified Gap	Description	Relevance to the Present Study
1	Lack of state-level analysis	Most existing studies rely on national-level or aggregated banking data, offering limited insight into state-specific NPA dynamics.	The present study focuses on Arunachal Pradesh to capture region-specific NPA patterns.

2	Limited regional focus on North-Eastern states	Very few empirical studies examine NPAs in geographically distinct and underdeveloped regions.	Addresses the underrepresentation of Arunachal Pradesh in NPA literature.
3	Insufficient linkage between operational practices and NPAs	Existing studies rarely link credit appraisal, post-sanction monitoring, and recovery practices to NPA outcomes at the regional level.	Examines institutional practices and their influence on NPAs.
4	Inadequate integration of institutional and regional factors	Socio-economic and geographical factors are often excluded from comparative NPA analyses.	Incorporates institutional and regional variables into the analytical framework.
5	Overemphasis on aggregate performance indicators	Prior research focuses on ratios and trends rather than operational processes.	Provides a process-oriented analysis of NPA management.

Source: Compiled by the researchers

### 3. Objectives of the study

The present study is undertaken with the following specific objectives:

- (a) To examine and compare the magnitude of Non-Performing Assets (NPAs) outstanding in public sector banks and private sector banks operating in Arunachal Pradesh.
- (b) To analyze the sectoral composition of NPAs across bank groups, with particular reference to priority sector and non-priority sector advances.
- (c) To assess whether the observed differences in NPA outstanding between public sector banks and private sector banks are statistically significant at the bank level.

### 4. Research Questions

Based on the stated objectives, the study seeks to address the following research questions:

What is the magnitude of Non-Performing Assets (NPAs) outstanding in public sector banks and private sector banks operating in Arunachal Pradesh, and how do they compare?

How does the sectoral composition of NPAs differ between public and private sector banks, particularly with respect to priority sector and non-priority sector advances?

Is there a statistically significant difference in NPA outstanding between public sector

banks and private sector banks at the bank level in Arunachal Pradesh?

### 5. Hypotheses of the study

To empirically examine the research questions, the following null and alternative hypotheses are formulated:

**Hypothesis 1:** Difference in NPA Outstanding

**H<sub>01</sub> (Null Hypothesis):** There is no statistically significant difference in the level of NPAs outstanding between public sector banks and private sector banks in Arunachal Pradesh.

**H<sub>11</sub> (Alternative Hypothesis):** There is a statistically significant difference in the level of NPAs outstanding between public sector banks and private sector banks in Arunachal Pradesh.

**Hypothesis 2: Sectoral Composition of NPAs**

**H<sub>02</sub> (Null Hypothesis):** There is no significant difference in the sectoral composition of NPAs (priority sector and non-priority sector) between public sector banks and private sector banks.

**H<sub>12</sub> (Alternative Hypothesis):** There is a significant difference in the sectoral composition of NPAs between public sector banks and private sector banks.

**Table 5.1: Mapping of Objectives, Research Questions, Hypotheses, and Conceptual Variables**

Objective	Research Question	Hypothesis	Conceptual Framework Link
Compare NPA outstanding in PSBs and PVBs	Do NPAs differ between PSBs and PVBs?	H <sub>01</sub> / H <sub>11</sub>	Institutional practices influencing NPAs
Analyze sectoral composition of NPAs	Does PS vs NPS composition differ by bank group?	H <sub>02</sub> / H <sub>12</sub>	Lending orientation and credit appraisal
Test statistical significance	Are differences statistically significant?	H <sub>01</sub> / H <sub>11</sub>	Outcome variable: Level of NPAs

Source: Compiled by the researchers

The research questions and hypotheses are closely aligned with the conceptual framework of the study, which identifies credit appraisal practices, post-sanction monitoring, and recovery mechanisms as key institutional determinants influencing the level of NPAs. Additionally, institutional and regional factors - such as geographical constraints, economic structure, and financial awareness - are treated as contextual variables that moderate the effectiveness of these processes. The comparison of NPA outstanding between public and private sector banks directly corresponds to differences in institutional practices embedded within the conceptual framework. Public sector banks and private sector banks differ in their approach to credit appraisal, monitoring, and recovery, which is expected to result in variation in NPA levels. Similarly, the analysis of sectoral composition of NPAs reflects differences in lending orientation, particularly the extent of exposure to priority sector advances. By testing the statistical significance of differences in NPA outstanding, the study empirically evaluates the outcomes predicted by the conceptual framework. Thus, the framework provides a logical structure linking institutional processes and regional conditions to observed differences in asset

quality across bank groups in Arunachal Pradesh.

## 6. Research Methodology

The methodology is designed to ensure systematic comparison, reliability, and analytical rigor.

### 6.1. Research Design and Sources of Data

The present empirical study is based on secondary data obtained from the State Level Bankers' Committee (SLBC) reporting system for Arunachal Pradesh. Specifically, the study utilizes bank-wise NPA outstanding information reported under the Annual Credit Plan (ACP) framework. The primary dataset used is titled "Bank-wise Progress under ACP NPA OUTSTANDING Report of Arunachal Pradesh as on 30-06-2025", with all values reported in ₹ lakhs. The SLBC serves as the apex coordination forum under the Lead Bank Scheme and plays a crucial role in monitoring banking performance, credit deployment, and asset quality at the state level. The SLBC reporting mechanism provides standardized, bank-wise, and sector-wise information, making it a reliable and authoritative source for analyzing NPAs at the regional level. Background information on the SLBC framework and reporting structure for Arunachal Pradesh is available through the SLBC North-East portal.

**Table 6.1: Details of Data Source**

Aspect	Description
Source of Data	State Level Bankers' Committee (SLBC), Arunachal Pradesh
Nature of Data	Secondary, bank-wise NPA outstanding
Reporting Framework	Annual Credit Plan (ACP)
Unit of Measurement	₹ lakhs
Coverage	Public and private sector banks operating in Arunachal Pradesh
Purpose	Assessment and comparison of NPAs across bank groups

Source: Compiled by the researchers

## 6.2. Scope and Sample of the Study

The scope of the study is confined to commercial banks operating in Arunachal Pradesh, with a specific focus on public sector banks and private sector banks. These two bank groups are selected as the core comparison units due to their dominant role in credit delivery and their differing ownership structures, lending mandates, and

risk management practices. A total of 20 commercial banks form the effective sample for comparative analysis. Other banking institutions, such as Regional Rural Banks (RRBs) and cooperative banks, are observed in the dataset but are excluded from the core analysis to maintain comparability and analytical consistency.

**Table 6.2.: Scope and Sample Composition**

Bank Group	Number of Banks	Examples (as per dataset)	Role in Analysis
Public Sector Banks (PSBs)	12	SBI, PNB, Canara Bank, Bank of Baroda, UCO Bank	Core comparison group
Private Sector Banks (PVBs)	8	ICICI Bank, HDFC Bank, Axis Bank, Yes Bank	Core comparison group
Other Institutions	—	RRBs, Cooperative Banks	Observed but excluded from comparison
Total Sample Size	20 banks	—	Bank-level analysis

Source: Compiled by the researchers

## 6.3. Variables Constructed

The raw SLBC dataset reports NPA outstanding amounts across multiple lending categories. For analytical clarity and consistency with the objectives of the study, relevant variables were constructed by aggregating reported categories into meaningful indicators of asset quality.

### 6.3.1. Total NPA Outstanding

Total NPA Outstanding for each bank is computed as the sum of all reported NPA amount categories in the dataset. This variable represents the overall magnitude of impaired assets at the bank level within the state.

### 6.3.2. Priority Sector (PS) NPA Outstanding

Priority Sector NPA Outstanding is derived by aggregating NPAs related to priority sector categories, including agriculture,

micro, small and medium enterprises (MSMEs), education loans under priority sector norms, and housing loans qualifying as priority sector advances.

### 6.3.3. Non-Priority Sector (NPS) NPA Outstanding

Non-Priority Sector NPA Outstanding is calculated by summing NPAs related to non-priority sector categories, such as non-priority agriculture, education loans, housing loans, personal loans, and other non-priority advances.

### 6.3.4. Priority Sector Share of NPAs

The Priority Sector share of NPAs is computed as the ratio of Priority Sector NPA Outstanding to Total NPA Outstanding for each bank, provided total NPAs are greater than zero. This indicator captures the relative contribution of priority sector lending to overall NPAs.

**Table 6.3: Variables Constructed for Analysis**

Variable Name	Definition	Measurement
Total NPA Outstanding	Aggregate of all NPA categories reported by a bank	₹ lakhs
Priority Sector NPA Outstanding	Sum of NPAs from agriculture, MSME, education (PS), housing (PS)	₹ lakhs
Non-Priority Sector NPA Outstanding	Sum of NPAs from non-priority sector categories	₹ lakhs
Priority Sector Share of NPAs	PS NPA ÷ Total NPA (where Total NPA > 0)	Ratio / Percentage
Bank Group	Classification of bank as PSB or PVB	Categorical

Source: Compiled by the researchers

### 6.4. Analytical Tools and Techniques

The study employs a combination of descriptive and inferential statistical techniques to address the stated objectives and test the formulated hypotheses.

#### 6.4.1. Descriptive Analysis

Descriptive statistics are used to summarize the distribution of NPAs across banks and bank groups. These include total NPA outstanding, sectoral composition, proportional shares, and concentration across priority and non-priority sectors. Descriptive analysis provides an initial understanding of the magnitude and structure of NPAs in Arunachal Pradesh.

#### 6.4.2. Inferential Analysis

To assess whether observed differences in NPAs between public and private sector banks are statistically significant, difference-testing techniques are employed at the bank level.

- (a) Welch’s t-test is applied to compare mean NPA outstanding between PSBs and PVBs, as it does not assume equal variances between groups.
- (b) Mann–Whitney U test, a non-parametric alternative, is used as a robustness check due to the relatively small sample size and potential skewness in NPA data.

**Table 6.4: Analytical Tools Used in the Study**

Analytical Technique	Purpose of Application	Statistical Justification
Descriptive Statistics	To summarize the magnitude, distribution, and sectoral composition of NPAs across public and private sector banks.	Provides a foundational understanding of central tendency, dispersion, and structural patterns in NPA data.
Welch’s t-test	To compare the mean NPA outstanding between public sector banks (PSBs) and private sector banks (PVBs).	Appropriate when group variances are unequal and sample sizes differ, ensuring more reliable inference than the standard t-test.
Mann–Whitney U Test	To conduct a non-parametric comparison of NPA levels between PSBs and PVBs.	Robust alternative when normality assumptions may be violated and sample size is relatively small.
Ratio Analysis	To compute the Priority Sector (PS) share of total NPAs and assess sectoral concentration.	Enables proportional comparison of NPA composition across bank groups, independent of absolute scale differences.

Source: Compiled by the researchers

## 7. RESULTS AND DISCUSSION

The empirical findings are based on bank-wise NPA outstanding data for public and private sector banks operating in Arunachal Pradesh as on 30 June 2025. The data were organized and analysed using SPSS. The

analysis focuses on magnitude, composition, concentration, and statistical differences between bank groups.

### 7.1. Overall NPA Outstanding: Public vs Private Sector Banks

**Table 7.1: Aggregate NPA Outstanding by Bank Group in Arunachal Pradesh**

Bank Group	NPA (₹ lakhs)	NPA (₹ crore)	Share (%)
Public Sector Banks	33,729.64	337.30	89.8
Private Sector Banks	3,825.10	38.25	10.2
Total	37,554.74	375.55	100.0

Source: State Level Bankers’ Committee (SLBC), Arunachal Pradesh (2025).

An assessment of the aggregate Non-Performing Assets (NPAs) outstanding among commercial banks operating in Arunachal Pradesh as on 30 June 2025 reveals substantial variation between public

sector banks (PSBs) and private sector banks (PVBs). The total NPA outstanding for the combined sample of PSBs and PVBs amounts to Rs. 37,554.74 lakhs (Rs. 375.55 crore). Of this aggregate figure, PSBs

account for Rs. 33,729.64 lakhs (Rs. 337.30 crore), whereas PVBs account for Rs. 3,825.10 lakhs (Rs. 38.25 crore). These figures indicate that PSBs constitute

approximately 89.8% of total NPAs, while PVBs contribute only 10.2%, demonstrating a pronounced imbalance in NPA distribution across bank groups.

**Table 7.2: Descriptive Statistics of Bank-Level NPA Outstanding (₹ lakhs)**

Statistic	PSBs (n = 12)	PVBs (n = 8)
Mean NPA	2,810.80	478.14
Median NPA	5,409.40	323.45
Standard Deviation	1,420.35	690.22
Minimum	1,115.62	12.40
Maximum	7,409.67	2,357.74

Source. State Level Bankers' Committee (SLBC), Arunachal Pradesh (2025).

The descriptive analysis reveals substantial disparities in the magnitude and distribution of NPAs between PSBs and PVBs. First, the mean NPA outstanding of PSBs (Rs. 2,810.80 lakhs) is significantly higher than that of PVBs (Rs. 478.14 lakhs). This indicates that, on average, public-sector banks carry a considerably larger burden of non-performing assets at the bank level. Second, the median value for PSBs (Rs. 5,409.40 lakhs) is substantially higher than that for PVBs (Rs. 323.45 lakhs), suggesting that even after controlling for potential skewness, the central tendency of NPAs remains markedly higher among public sector banks. Third, the standard deviation among PSBs (Rs. 1,420.35 lakhs) exceeds that of PVBs (Rs. 690.22 lakhs), reflecting greater dispersion and concentration of NPAs among a few large public sector banks. The higher variability indicates heterogeneity within the PSB group, likely

driven by differences in branch penetration, credit exposure, and portfolio size. The maximum NPA recorded among PSBs (Rs. 7,409.67 lakhs) further illustrates the scale of exposure among major public banks operating in the state. In contrast, the maximum NPA among PVBs (Rs. 2,357.74 lakhs) remains significantly lower.

### 7.3. Composition of NPAs: Priority Sector vs Non-Priority Sector

To further understand the structural nature of Non-Performing Assets (NPAs) in Arunachal Pradesh, the total NPA outstanding was disaggregated into Priority Sector (PS) and Non-Priority Sector (NPS) categories for both public and private sector banks. This classification provides insight into the sectoral concentration of stressed assets and allows assessment of how lending orientation influences asset quality across bank groups.

**Table 7.3: Sectoral Composition of NPA Outstanding by Bank Group**

Bank Group	Priority Sector NPAs (₹ lakhs)	Share (%)	Non-Priority Sector NPAs (₹ lakhs)	Share (%)	Total NPAs (₹ lakhs)
Public Sector Banks	29,880.96	88.6	3,848.68	11.4	33,729.64
Private Sector Banks	302.16	7.9	3,522.94	92.1	3,825.10

Source. State Level Bankers' Committee (SLBC), Arunachal Pradesh (2025).

The results reveal a pronounced divergence in the composition of NPAs between public and private sector banks operating in Arunachal Pradesh. For public sector banks (PSBs), Priority Sector NPAs amount to Rs. 29,880.96 lakhs, constituting 88.6% of total

PSB NPAs, whereas Non-Priority Sector NPAs account for only 11.4%. This overwhelming concentration of NPAs within the priority sector reflects the developmental mandate of PSBs, which are required to allocate a substantial portion of their lending

portfolio to agriculture, micro, small and medium enterprises (MSMEs), housing for weaker sections, and other socially oriented segments. Given the economic structure of Arunachal Pradesh - characterized by agriculture-dominant livelihoods, small-scale enterprises, and limited industrial diversification - the higher NPA burden in priority segments is consistent with structural credit risk patterns. On the other hand, private sector banks (PVBs) display a markedly different composition. Priority Sector NPAs account for only Rs. 302.16 lakhs (7.9%), while Non-Priority Sector NPAs amount to Rs. 3,522.94 lakhs, representing 92.1% of total PVB NPAs. This indicates that NPAs in private banks are predominantly concentrated in non-priority lending categories, such as retail loans, personal advances, and other commercially oriented segments. Unlike PSBs, private sector banks generally maintain selective exposure to priority sectors and emphasize profitability-driven portfolio management. The structural contrast between the two bank groups underscores the influence of lending orientation and institutional mandate on NPA composition. While PSBs bear greater

developmental responsibilities, PVBs operate under a more commercially focused framework, which shapes both credit deployment patterns and risk exposure. From a policy perspective, these findings imply that NPA mitigation strategies must be sector-specific and bank-group-specific. For PSBs, strengthening appraisal and monitoring mechanisms in agriculture and MSME segments is crucial. For PVBs, enhanced risk controls in retail and non-priority portfolios are likely to yield greater asset quality improvements.

### 7.3. Sectoral Concentration of NPAs (High-Level Buckets)

To obtain a more granular understanding of the distribution of Non-Performing Assets (NPAs), the sectoral components of NPAs were further aggregated into four broad categories: Agriculture (Priority Sector), MSME (Priority Sector), Other Priority Sector, and Non-Priority Sector. This classification enables a deeper examination of risk concentration within each bank group and helps identify the principal contributors to asset deterioration in Arunachal Pradesh.

**Table 7.4: Sectoral Distribution of NPA Outstanding by Bank Group (Percentage Share)**

Sector Category	PSBs (% of PSB NPAs)	PVBs (% of PVB NPAs)
Agriculture (Priority Sector)	13.5	1.3
MSME (Priority Sector)	41.2	4.8
Other Priority Sector	34.0	1.8
Non-Priority Sector	11.4	92.1
Total	100.0	100.0

**Source: Computed from SLBC, Arunachal Pradesh (2025).**

The sectoral breakdown reveals distinct patterns of NPA concentration between public and private sector banks.

**Public Sector Banks (PSBs):** For PSBs, MSME-related NPAs account for 41.2% of total PSB NPAs, making it the single largest contributor to stressed assets. This is followed by Other Priority Sector categories (34.0%), which include housing, education, and weaker section advances, and Agriculture (13.5%). Collectively, priority sector categories account for nearly 88.7% of PSB NPAs, confirming the earlier

observation regarding the dominance of priority-linked stress in public banks. The high concentration in MSME lending suggests structural vulnerabilities in small enterprise financing within the state. MSMEs in Arunachal Pradesh often operate in informal or semi-formal environments, face limited market access, and are sensitive to economic shocks. Weak documentation, limited collateral, and cash-flow volatility may further exacerbate repayment risk. This highlights the need for enhanced credit appraisal mechanisms, periodic monitoring,

early warning systems, and targeted restructuring strategies within this segment. Agriculture-related NPAs, although smaller than MSME, remain significant at 13.5%, reflecting climatic risk, seasonal income variability, and structural agricultural constraints in the region.

**Private Sector Banks (PVBs):** PVBs exhibit a strikingly different sectoral pattern. Non-Priority Sector NPAs account for 92.1% of total PVB NPAs, indicating that the bulk of stressed assets arises from retail, personal loans, and other commercially oriented advances. Priority sector categories collectively represent less than 8% of total NPAs in private banks. This pattern suggests that private sector banks in Arunachal Pradesh maintain limited exposure to agriculture and MSME lending relative to

PSBs. Instead, their NPA risk is concentrated in non-priority portfolios, which may include unsecured personal loans, consumer credit, and other retail products. While these segments typically offer higher margins, they may also be sensitive to borrower-level financial distress.

#### 7.4. Bank-Level Concentration of NPAs

An examination of bank-wise Non-Performing Asset (NPA) outstanding provides insight into the concentration of stressed assets within individual institutions. While aggregate figures offer a macro-level comparison between public and private sector banks, bank-level analysis reveals the extent to which NPAs are concentrated among specific large institutions within each group.

**Table 7.5: Top Five Public Sector Banks by NPA Outstanding in Arunachal Pradesh**

Bank Name	NPA Outstanding (₹ lakhs)
State Bank of India	7,409.67
Punjab National Bank	5,437.39
Canara Bank	5,415.88
Bank of Baroda	5,404.92
UCO Bank	4,180.81

Source. State Level Bankers' Committee (SLBC), Arunachal Pradesh (2025).

**Table 7.6: Top Five Private Sector Banks by NPA Outstanding in Arunachal Pradesh**

Bank Name	NPA Outstanding (₹ lakhs)
ICICI Bank	2,357.74
Axis Bank	718.62
HDFC Bank	435.10
IDBI Bank	211.79
Yes Bank	56.85

Source. State Level Bankers' Committee (SLBC), Arunachal Pradesh (2025).

The bank-level analysis reveals a significant concentration of NPAs within a limited number of large banks in both sectors.

**Public Sector Banks:** Among public sector banks, the State Bank of India (SBI) emerges as the largest contributor to NPAs, with outstanding NPAs amounting to Rs. 7,409.67 lakhs. This is followed by Punjab National Bank, Canara Bank, Bank of Baroda, and UCO Bank. Collectively, these five banks account for a substantial proportion of total PSB NPAs in the state. The observed concentration is largely attributable to differences in operational scale, branch penetration, and credit deployment volume.

Public sector banks typically maintain extensive branch networks across rural and semi-urban areas of Arunachal Pradesh. Their dominant market presence, larger customer base, and greater involvement in priority sector lending naturally result in higher absolute NPA figures. Importantly, higher absolute NPAs in larger banks do not necessarily imply poorer asset quality; rather, they may reflect proportional exposure relative to portfolio size.

**Private Sector Banks:** Within private sector banks, ICICI Bank accounts for the largest share of NPAs (₹ 2,357.74 lakhs), significantly exceeding other private banks

in the state. Axis Bank and HDFC Bank follow at considerably lower levels. The distribution suggests that private banks with relatively greater operational presence and credit exposure in Arunachal Pradesh contribute more substantially to the total NPA figure. Unlike PSBs, private sector banks generally operate with a more limited branch network in the state. Consequently, NPA concentration among private banks is more closely aligned with selective portfolio deployment rather than extensive geographic outreach.

### 7.5. Hypothesis Testing: Bank-Level Comparison

To examine whether the observed differences in Non-Performing Assets

(NPAs) between public sector banks (PSBs) and private sector banks (PVBs) are statistically significant, inferential analysis was conducted. Given the unequal sample sizes (PSBs = 12; PVBs = 8) and potential variance heterogeneity, Welch's independent samples t-test was applied to compare mean total NPA outstanding between the two bank groups. Additionally, the Mann-Whitney U test, a non-parametric alternative, was employed as a robustness check due to small sample size and possible non-normal distribution of NPA data. The analysis also extended to testing differences in the priority sector share of NPAs, to assess whether sectoral composition differs significantly between the two bank groups.

**Table 7.7: Results of Hypothesis Tests Comparing PSBs and PVBs (Bank-Level Analysis)**

Test Applied	Variable Tested	Test Statistic	p-value	Result
Welch's t-test	Mean Total NPA Outstanding	$t \approx 2.89$	0.0117	Significant at 5%
Mann-Whitney U test	Total NPA Outstanding	$U \approx 19$	0.0228	Significant
Mann-Whitney U test	Priority Sector Share of NPAs	$U \approx 3$	0.00088	Highly Significant

Source: Compiled by the authors

The results of the Welch's t-test ( $t \approx 2.89$ ,  $p = 0.0117$ ) indicate a statistically significant difference in mean NPA outstanding between public and private sector banks. Since the p-value is below the 0.05 threshold, the null hypothesis is rejected, confirming that public sector banks maintain significantly higher NPA levels than private sector banks in Arunachal Pradesh. This finding is consistent with the earlier descriptive statistics, which demonstrated a substantial difference in the magnitude of NPAs between the two bank groups. To ensure robustness, the Mann-Whitney U test was conducted due to the relatively small sample size and potential non-normal distribution of NPA data. The test yielded a significant result ( $U \approx 19$ ,  $p = 0.0228$ ), reinforcing the conclusion that the difference in total NPA outstanding between PSBs and PVBs is statistically significant and not sensitive to distributional assumptions. The consistency between the parametric (Welch's t-test) and non-parametric (Mann-Whitney U test) results strengthens the reliability of the findings. Further analysis of

the priority sector share of NPAs revealed a highly significant difference between the two bank groups ( $U \approx 3$ ,  $p = 0.00088$ ). This indicates that the divergence between public and private banks extends beyond the magnitude of NPAs to their sectoral composition. Public sector banks exhibit a substantially higher concentration of NPAs in priority sector lending, whereas private sector banks show greater concentration in non-priority lending segments. The hypothesis testing confirms statistically and structurally significant differences in both NPA magnitude and sectoral composition, thereby supporting Hypotheses 1 and 2. These findings highlight the important role of ownership structure, institutional mandate, and lending orientation in shaping credit risk outcomes among banks operating in Arunachal Pradesh.

### 8. Policy Implications and Recommendations

The empirical findings of the study reveal significant differences in both the magnitude and sectoral composition of Non-Performing

Assets (NPAs) between public sector banks (PSBs) and private sector banks (PVBs) operating in Arunachal Pradesh. These findings carry important implications for banking policy, institutional strategy, regulatory oversight, and regional credit planning. Given that PSBs account for nearly 90% of total NPAs and exhibit a high concentration in priority sector lending - particularly MSMEs and agriculture - policy interventions must be tailored to address structural vulnerabilities within these segments. Conversely, private sector banks demonstrate concentration of NPAs in non-priority sectors, suggesting the need for improved risk controls in retail and commercially oriented portfolios. The following recommendations are derived from the empirical analysis and aligned with the conceptual framework of credit appraisal, monitoring mechanisms, recovery processes, and regional institutional factors.

### 8.1. Policy Implications for Public Sector Banks (PSBs)

Public sector banks require targeted reforms in priority sector credit management. Since MSMEs constitute the largest share of NPAs within PSBs, strengthening credit appraisal mechanisms - particularly cash-flow-based assessment rather than collateral-based lending - is critical. Enhanced borrower profiling, periodic review of credit limits, and early warning systems may reduce slippages. Agriculture lending in geographically sensitive regions like Arunachal Pradesh demands climate-risk assessment and flexible repayment structures aligned with seasonal income patterns. Strengthening cluster-based monitoring for MSMEs and promoting digital loan tracking systems can improve post-sanction supervision. PSBs should also enhance recovery efficiency by adopting time-bound restructuring frameworks, strengthening coordination with legal recovery channels, and leveraging technology-enabled recovery platforms.

**Table 8.1: Policy Recommendations for Public Sector Banks**

Identified Issue	Empirical Evidence	Policy Recommendation	Expected Outcome
High MSME-related NPAs	41.2% of PSB NPAs concentrated in MSME segment	Strengthen cash-flow-based credit appraisal; implement cluster-based MSME monitoring frameworks.	Reduction in loan slippages and improved asset quality in MSME portfolio.
Agricultural credit risk	13.5% of PSB NPAs linked to agriculture sector	Introduce climate-sensitive lending norms; adopt flexible and seasonal repayment schedules.	Enhanced recovery performance in agricultural advances.
Weak post-sanction monitoring	Over 88% of PSB NPAs concentrated in priority sector lending	Deploy digital monitoring tools, early warning systems, and periodic portfolio review mechanisms.	Early identification of stressed accounts and reduced NPA formation.
Recovery delays	High structural concentration of NPAs among PSBs	Strengthen coordination in restructuring, legal recovery processes, and time-bound resolution frameworks.	Accelerated NPA resolution and improved recovery rates.

Source: Compiled by the researchers

### 8.2. Policy Implications for Private Sector Banks (PVBs)

Private sector banks exhibit NPA concentration primarily in non-priority sectors (92.1%). This suggests greater exposure to retail and personal loan segments. Strengthening borrower credit scoring systems, monitoring unsecured

lending exposure, and improving customer risk profiling are essential to mitigate further deterioration. Private banks should also implement advanced analytics-based portfolio risk assessment and dynamic credit limits to manage retail risk effectively. Given their operational flexibility, private banks can adopt proactive restructuring strategies

and customer engagement models to prevent accounts from slipping into NPAs.

**Table 8.2: Policy Recommendations for Private Sector Banks Based on Empirical Findings**

Identified Issue	Empirical Evidence	Policy Recommendation	Expected Outcome
High non-priority NPAs	92.1% concentration of NPAs in non-priority sector	Strengthen retail credit scoring systems and borrower risk profiling mechanisms	Lower probability of default and improved credit quality
Exposure to unsecured lending	Dominance of retail and personal loan portfolios	Implement risk-based pricing strategies and diversify portfolio exposure	Enhanced portfolio stability and balanced risk distribution
Monitoring inefficiencies	Concentration of NPAs in select private banks	Introduce predictive analytics, AI-based monitoring tools, and dynamic credit review systems	Early identification of stressed accounts and reduced slippages
Recovery challenges	Limited regional recovery infrastructure	Strengthen borrower engagement models and expand digital recovery platforms	Improved recovery rate and faster resolution of NPAs

Source: Compiled by the researchers

### 8.3. Regulatory and Institutional Recommendations

At the regulatory level, the Reserve Bank of India and the State Level Bankers' Committee (SLBC) should enhance state-specific monitoring frameworks. Periodic publication of district-wise NPA dashboards can facilitate targeted interventions. Given the unique geographical and socio-economic

conditions of Arunachal Pradesh, policy measures should integrate regional factors such as financial literacy, infrastructural challenges, and sectoral vulnerabilities. Credit-linked skill development and enterprise support programs can indirectly reduce default risk by strengthening borrower capacity.

**Table 8.3: Regulatory and Institutional-Level Recommendations for Strengthening NPA Management**

Area of Intervention	Proposed Action	Institutional Responsibility	Expected Impact
State-level monitoring	Develop and publish district-wise NPA dashboards for periodic review and corrective action	State Level Bankers' Committee (SLBC) / Reserve Bank of India (RBI)	Enhanced regional oversight and data-driven policy intervention
Financial literacy	Conduct structured borrower awareness and financial literacy programs across rural and semi-urban areas	Commercial Banks in coordination with State Authorities	Reduction in intentional and unintentional loan defaults
MSME ecosystem support	Introduce credit-plus initiatives, including skill development, market linkage support, and enterprise advisory services	Banks in collaboration with Government Agencies	Improved business sustainability and strengthened repayment capacity
Legal recovery mechanisms	Streamline and expedite resolution procedures under existing regulatory frameworks	Regulatory and Legal Authorities	Accelerated NPA resolution and improved recovery rates

Source: Compiled by the researchers

### 8.4. Strategic Implications

The empirical findings of the study underscore that Non-Performing Asset (NPA) mitigation strategies cannot be uniform across bank groups operating in Arunachal Pradesh. The structural

differences observed in both the magnitude and sectoral composition of NPAs between public and private sector banks necessitate differentiated strategic responses grounded in institutional mandate, portfolio orientation, and regional realities. For public

sector banks, the predominance of NPAs within the priority sector - particularly MSMEs and agriculture - indicates the need for structural strengthening of credit appraisal frameworks. Strategic emphasis should be placed on cash-flow-based lending assessments, sector-specific risk scoring models, and cluster-based monitoring systems tailored to the socio-economic conditions of the state. Given the developmental mandate of public banks, sustainable credit growth must be supported by improved post-sanction supervision, early warning systems, and technology-enabled portfolio tracking. Additionally, strengthening coordination between banks and government development agencies can help address underlying enterprise vulnerabilities that contribute to default risk. For private sector banks, the high concentration of NPAs in non-priority and retail segments highlights the importance of advanced risk analytics, dynamic credit scoring models, and prudent exposure limits in unsecured portfolios. Private banks must prioritize portfolio diversification and predictive risk monitoring to mitigate concentration risk. Given their operational flexibility, these institutions are well-positioned to adopt innovative digital monitoring systems and customer engagement strategies that can reduce slippages. From a broader policy perspective, the findings suggest that regulators and policymakers should adopt a region-sensitive approach to credit risk management. Arunachal Pradesh presents unique geographical and economic challenges that require adaptive lending frameworks rather than standardized national models. Sustainable credit expansion in such regions must balance financial inclusion objectives with prudent risk management to ensure long-term asset quality.

## **9. CONCLUSION**

An empirical assessment of Non-Performing Assets (NPAs) in public sector banks (PSBs) and private sector banks (PVBs) operating in Arunachal Pradesh reveals substantial

structural differences in both magnitude and sectoral composition. Analysis of bank-wise data as of 30 June 2025 indicates statistically significant and economically meaningful disparities between the two bank groups with respect to overall NPA levels as well as their distribution across lending segments. Public sector banks account for an overwhelming proportion of total NPA outstanding in the state, contributing nearly 90 percent of the aggregate figure. At the bank level, PSBs demonstrate markedly higher mean and median NPA values compared to private sector banks. Inferential statistical results confirm that these differences are statistically significant, thereby indicating that ownership structure and institutional orientation exert a measurable influence on the scale of asset impairment. Beyond the aggregate magnitude, pronounced contrasts are observed in sectoral concentration. NPAs in public sector banks are heavily concentrated within the priority sector, particularly in MSME and agriculture-related advances. This reflects the developmental mandate and broader socio-economic responsibilities carried by these institutions. In contrast, private sector banks exhibit a dominant concentration of NPAs within non-priority segments, largely associated with retail and commercially oriented lending portfolios. The statistical significance of these compositional differences highlights the structural divergence in credit deployment and risk exposure across bank groups. The evidence underscores that variations in NPA outcomes are closely linked to institutional mandate, portfolio structure, and operational practices, including credit appraisal standards and monitoring mechanisms. Given the geographical and economic characteristics of Arunachal Pradesh, differentiated risk management strategies tailored to the distinct institutional profiles of public and private sector banks are essential. NPAs in the state are shaped not merely by borrower-level repayment behavior but by broader institutional, structural, and regional dynamics. Strengthened appraisal systems, improved post-sanction supervision,

efficient recovery frameworks, and region-sensitive credit planning remain central to promoting sustainable banking performance and financial stability.

### **Declaration by Authors**

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