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Impact of 3rd Phase Consolidation of RRBs in Other States on the Financial Performance of RRBs in Odisha

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ABSTRACT

This research study evaluates the impact and challenges after merging of Regional Rural Banks (RRBs) in Odisha with reference to a multi-facet perspective. This study uses a span of 10 years, out of which five years before merging (2013-2018) and five years after merging (2018-2023). The study makes use of the data collected from secondary sources. Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Gross Non-Performing Assets (GNPA) are some of the key financial parameters considered in the research. It has been found that ROA has witnessed an increase from 0.42% (before merger) to 0.78% (after merger). Also, ROE has recorded a rise from 6.5% to 11.2%, thereby indicating improved profitability of the RRBs in Odisha. However, GNPA has demonstrated a somewhat inconsistent pattern, starting with an increase from 8.9% to 10.4%, followed by a decline to 7.6%. The operational efficiency has been found to have improved, as the cost-to-income ratio has fallen from 62% to 54%. Despite the positive outcomes, there exist various challenges after the mergers of RRBs in Odisha, such as poor integration (65%), HR-related problems (52%), and technology adaptation challenges (48%).

Keywords: RRBs, Odisha, Bank Mergers, Financial Performance, ROA, ROE, GNPA, Cost-to-Income Ratio, Post-Merger Challenges, Rural Banking

INTRODUCTION

Regional Rural Banks (RRBs) are central in enhancing credit systems in rural areas and financial inclusion in India. Founded with the aim of closing the divide between commercial banking and the rural areas, RRBs have played a critical role in offering affordable credit to small and marginal farmers, micro-entrepreneurs, and rural households (Ahmed, 2015; Bharti and Kumari, 2022). These institutions have been struggling with structural inefficiencies, increasing operational costs, and quality of assets over time which has impacted their sustainability and reach (Chinna, 2013; Gadhavi and Vekariya, 2014). Consolidation and merger policies are strategic reforms initiated by the Government of India to increase the efficiency, capital base, and operational viability of RRBs to align them with more widespread financial sector reforms (Veerakumar and Suresh, 2017; Bhandari and Basu, 2023). Bank mergers have become a prominent concept in the world as a tool to enhance financial stability, operational effectiveness, and competitiveness. Empirical literature indicates that mergers may result in economies of scale, increased use of assets, and increased profitability, but the effects are frequently situation-specific (Amel-Zadeh and Meeks, 2020; Mahamuni et al., 2023). A number of studies have tested the pre- and post-merger performances of banks in the Indian context, with mixed outcomes regarding profitability and improvement of the efficiency (Kalshetty et al., 2020; Khan et al., 2025). Although certain mergers have led to better financial indicators, others have suffered temporary disturbances in integration due to cultural differences, system incompatibility, and cultural differences (Mehta et al., 2024; Elhajji and Mihai-Yiannaki, 2025). The RRBs restructuring and consolidation in Odisha was done with the aim of paring down operations and improving services delivery in the rural and semi-urban regions. The purpose of the mergers was to eliminate redundancies, enhance capital adequacy, and enhance the governance mechanisms. The transition process has not been smooth though. The technological integration, alignment between human resources, and rationalization of branches have been major challenges to smooth operations (Yadav et al., 2023; Gupta et al., 2025). Additionally, the rural banking systems are predisposed to externalities like the dependency on agriculture, the economic disparities of the region, and policy interventions, which exacerbate the outcomes of the merger (Sidhu and Gill, 2006; Pandey et al., 2025). The financial performance is a critical measure used to determine the success of mergers. Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Non-Performing Assets (NPA), are some of the indicators used to show the profitability, efficiency and risk management of banks. Other literature in the past has noted that although financial stress can be experienced in the short-term as a result of restructuring costs, the long-term results can be better profitability and lower cost-to-income ratios (Sugiharto et al., 2018; Sivaneshwaran et al., 2025). Nevertheless, these gains may be neutralized by the presence of non-performing assets and operational inefficiencies, especially in the rural banking setting (Bhatia and Kumar, 2024; Anwar et al., 2021). Although there has been immense study on banking mergers and the performance of the RRBs, there is still a wide gap in the understanding of the collective effects of mergers on the financial performance as well as on the post-merger operational issues, especially in a region specific issue as Odisha. Most of the current literature concentrates on either financial metrics or institutional features independently, thus restricting a comprehensive analysis (Munjal and Sharma, 2023; Caiazza et al., 2021). Consequently, the paper will be multidimensional in its approach to studying the performance of RRBs in the post-merger stage within Odisha by combining financial analysis of this process with an overview of the operational and managerial difficulties. This holistic view is likely to assist in policy-making, institutional empowerment, and sustainable rural banks development in India.

Overview of Regional Rural Banks (RRBs) in India

The Regional Rural Banks Act, 1976, created Regional Rural Banks (RRBs) whose primary aim was to bring institutional credit facilities to rural underprivileged populations such as small and marginal farmers, agricultural laborers, artisans, and micro-entrepreneurs. The banks were meant to be hybrid institutions that combined the familiarity of the local population with the commercial banks with the financial power and management skills of the commercial banks, thus guaranteeing both accessibility and stability in rural financial systems (Ahmed, 2015; Chinna, 2013). Throughout the decades, RRBs have grown enormously in size as a branch network, outreach to customers, and the products offered, making them a vital component of the Indian rural banking structure (Bhandari and Basu, 2023; Yadav et al., 2023). Although they expanded, the RRBs have had to deal with a series of problems, including low profitability, high operation expenses, and increasing non-performing assets, primarily because of their social banking commitments and their exposure to agriculture-based economies (Gadhavi and Vekariya, 2014; Bharti and Kumari, 2022). Their performance was further inhibited by structural inefficiencies, regional inequalities, and poor use of technology, which required constant reforms and interventions by the policy (Veerakumar and Suresh, 2017; Gupta et al., 2025). Research also notes that although RRBs have played a major role in the expansion of credit in rural regions, their sustainability is pegged on enhancing efficiency, governance and financial strength (Kano and Tsutsui, 2003; Megicks et al., 2005).

Role of RRBs in financial inclusion and rural development

RRBs have been instrumental in the transformation of financial inclusion and rural development by penetrating geographically remote and economically weaker sectors of society by formal banking services. RRBs have enabled access to credit, savings, and insurance services by targeting lending, financing priority sectors, and supporting self-help groups (SHGs) and micro-enterprises, which helps in reducing reliance on informal moneylenders (Pandey et al., 2025; Yadav et al., 2024). They have played a role in agricultural finance especially in allowing investment in farming inputs, irrigation, and related activities that subsequently increase the level of productivity and income in rural areas (Sidhu & Gill, 2006; Bharti and Kumari, 2022). Additionally, RRBs have reinforced government programs like Direct Benefit Transfers (DBT), financial literacy, and rural employment, among others, and enhanced the socio-economic fabric of rural India (Mukherjee and Chatterjee, 2023; Borde et al., 2026). Empirical evidence indicates that the greater the availability of rural banking services, the more it influences poverty levels, entrepreneurship, and economic growth in rural regions (Setiawan et al., 2025; Putra et al., 2025). Nevertheless, there are still obstacles like financial awareness, infrastructural, and credit risks that restrict the potential of RRBs to spur inclusive growth (Aboagye, 2009; Amendola et al., 2023). However, they will continue to play a very crucial role in ensuring sustainable rural development and alleviation of socio-economic disparities.

Government-led consolidation/merger policy

The Government of India came up with policies of consolidation and merger for RRBs as part of financial sector reforms with the aim of increasing efficiency and capital adequacy through reductions of duplications in services and activities of these banks. The reforms began in the mid-2000s and involved consolidating geographically proximate RRBs under the same bank in order to ensure their sustainability and viability through economies of scale (Veerakumar & Suresh, 2017; Bhandari & Basu, 2023). Consolidation would help these banks be profitable, become more efficient, and adopt technologies that help them manage risks better (Kalshetty et al., 2020; Khan et al., 2025). Mergers would also ensure that problems such as fragmentation of institutions and poor financial performances among small RRBs are addressed (Amel-Zadeh & Meeks, 2020; Mahamuni et al., 2023). Although many researchers have established that there has been improvement in operational efficiency and financial performances following mergers, others indicate short-term disruptions arising from difficulties in integrating the systems and managing human resource problems (Mehta et al., 2024; Elhajji & Mihai-Yiannaki, 2025). In India, the effectiveness of RRB mergers will depend on their implementation and how well commercial concerns are balanced with social banking goals.

Brief background of RRB mergers in Odisha

The Regional Rural Banks (RRBs) have been established in Odisha for improving credit delivery in rural areas, developing agriculture, and providing financial services to economically backward segments of society. The initial set-up involved the presence of more than one RRBs in different regions of Odisha sponsored by different public sector banks. Over time, however, these RRBs started facing various problems like lack of profit, increased costs, rising NPAs, weak capital base, and inadequate technology, making their operations inefficient and unsustainable (Ahmed, 2015; Chinna, 2013). In view of this situation, the government of India, in coordination with the RBI and NABARD, adopted the policy of consolidation, which was designed to enhance the effectiveness of RRBs through their restructure and consolidation in the entire country. As far as Odisha is concerned, there has been a process of consolidation of smaller RRBs to form large RRBs to improve their performance and make them competitive organizations in the changing financial landscape (Veerakumar & Suresh, 2017; Bhandari & Basu, 2023). Studies indicate that the restructuring process in Indian RRBs resulted in improvements in capital adequacy and branch productivity by approximately 15%–20%, although short-term transitional challenges remained significant (Kalshetty et al., 2020; Bharti & Kumari, 2022).

LITERATURE REVIEW

The banking performance, merging and rural financial system literature indicate that there is a multi-layered interaction of institutional restructuring, financial inclusion and sustainability outcomes. Research on bank failures and bank restructuring underscores the weaknesses in the governance and financial management. As an example, the example of Lakshmi Vilas Bank collapse highlights concerns with the nature of assets worsening and subpar strategic management, highlighting the importance of a strong regulatory control (Bhatia and Kumar, 2024). In the same manner, wider debates regarding accounting practices in mergers and acquisitions (M&A) indicate the role of financial reporting in supporting as well as veiling organizational performance in the restructuring processes (Amel-Zadeh and Meeks, 2020). These results are supplemented by studies that investigate strategic and regulatory issues in the consolidation of the banking industry, especially in emerging economies, where the institutional fragility tends to increase the risks associated with mergers (Elhajji and Mihai-Yiannaki, 2025). The table 1 shows the Summary of Literature on Bank Mergers, Financial Performance, and Rural Banking.

Table 1: Summary of Literature on Bank Mergers, Financial Performance, and Rural Banking

Ref. No.	Title	Author(s) & Year	Key Findings	Research Gaps
1	Unraveling the collapse of private sector banks in India	Bhatia & Kumar (2024)	Identifies poor asset quality governance failure, and capital erosion as key causes of Lakshmi Vilas Bank collapse	Limited focus on preventive regulatory frameworks and early warning systems
2	Sustainability performance after M&A deals	Caiazza et al (2021)	Firms with strong sustainability practices perform better post-merger in long term	Lacks sector-specific analysis, especially in banking
3	Vodafone acquisition of Mannesmann	Kumar (2019)	Highlights strategic expansion and global competitive advantage through M&A	Limited empirical analysis on financial outcomes post-merger

4	M&A challenges ir Libyan banking sector	Elhajji & Mihai-Yiannaki (2025)	Emphasizes regulatory barrier and institutional instability affecting mergers	Lacks quantitative validation and cross country comparison
5	Vodafone Ide merger analysis	Mehta et al (2024)	Reveals integration challenges financial stress, and marke competition issues	Limited long-tern performance evaluation
6	Merger impact or operating performance	Mahamuni e al. (2023)	Shows improvement ir operational efficiency post merger in beverage sector	Sector-specific; no directly generalizable tc banking
7	Pre vs post merge evaluation of Indiar banks	Kalshetty et al (2020)	Indicates moderate improvement in financia indicators post-merger	Lacks advancec econometric modeling and long-term analysis
8	Accounting practice in M&A	Amel-Zadeh & Meeks (2020)	Highlights manipulation anc strategic use of accounting ir mergers	Needs empirica validation in emerging markets
9	Financial performance of rura banks	Sugiharto et al (2018)	Identifies credit risk management efficiency, anc capital as key drivers	Limited comparative analysis across countries
10	Critique of RRBs ir Andhra Pradesh	Sivaprasad (1983)	Points out structura inefficiencies and policy limitations	Outdated; lacks moderr financial anc technological context
11	Agricultural loan research trends	Borde et al (2026)	Shows growing research interest in agricultural finance and credit systems	Limited linkage witl banking performance and mergers

An extensive amount of literature has been done to assess the effects of mergers on the performance of firms and there has been varied evidence about its performance. Some articles indicate that operational efficiency and competitiveness in the market have improved after the merger (Mahamuni et al., 2023; Kalshetty et al., 2020), whereas others point out the turbulence and integration issues that can be impediments to anticipated synergies (Mehta et al., 2024). The case studies of Vodafone and Mannesmann acquisition occurring on a global scale also demonstrate how strategic growth via mergers can transform competitive environments, though at a high price of both financial and operational cost (Kumar, 2019). Furthermore, sustainability has gained significance in measuring the results of mergers and acquisitions, and it was revealed that well-sustainable companies are more likely to achieve high performance in the long term after mergers (Caiazza et al., 2021). In reference to rural and regional banking, the literature outlines the role that the Regional Rural Banks (RRBs) have in the processes of financial inclusion and agricultural development is very significant. The first objections have been structural inefficiencies and operational constraints of RRBs (Sivaprasad, 1983), and the latter study has evaluated their financial performance based on efficiency metrics and econometric models (Ahmed, 2015; Chinna, 2013). Research indicates that despite the significant role of RRBs in the delivery of credit to the rural locations, there are challenges of profitability, bad assets, and governance (Gadhavi and Vekariya, 2014; Bharti and Kumari, 2022). RRBs reorganization and consolidation have been considered as strategic intervention to enhance their operating feasibility and coverage (Veerakumar and Suresh, 2017; Bhandari and Basu, 2023). Comparative international studies also enlighten more on the rural banking systems and their developmental roles. Research in Indonesia has revealed that Islamic and conventional rural banks positively influence the development of the area, yet their effectiveness is determined by the quality of the governance and credit management practices (Setiawan et al., 2025; Putra et al., 2025). Likewise, researches in Ghana and Mexico emphasize the significance of microfinance institutions and credit guarantee programs in increasing access to finance and regional development (Aboagye, 2009; Mendizabal, 2020). These results are in line with the general literature on financial inclusion, which highlights the importance of self-help groups and specially designed credit programs in enhancing rural livelihoods (Pandey et al., 2025; Sidhu and Gill, 2006). The other significant literature line is the determinants of banking efficiency and performance. Sophisticated analytical tools like stochastic frontier analysis have been used to estimate the level of efficiency in Indian banks, which have shown strong differences across the banks (Khan et al., 2025). In the same manner, the research of intellectual capital, MSME credit and governance strategies emphasizes the role of intangible resources and institutional systems in performing banks (Azhar et al., 2025; Putra et al., 2025). Extreme weather events, environmental and external factors have also been noted to affect banking operations and risk exposure and these are just a few reasons why financial systems should be resilient (Zhang and Ming, 2026; Bayangos et al., 2021). The literature also discusses the overlap between sustainability, financial inclusion and technological advancement in banking. Recent research focuses on the importance of fintech, digital banking, and sustainability in improving the performance of rural financial institutions (Yadav et al., 2024; Gupta et al., 2025). The idea of the triple bottom line, which includes economic, social, and environmental performance, has become increasingly popular in assessing the performance of the banking sector (Munjal and Sharma, 2023, 2024). Such points of view are especially applicable in the rural setting, where financial institutions need to strike a balance between profitability and social purposes like poverty reduction and agricultural growth (Yadav et al., 2023). Besides the research specific to the sector, more general economic and institutional research gives some background information on banking systems. The studies of fiscal policies and regional development reveal that there is an unequal distribution between urban and rural regions, which affects the performance of the financial sector (Amendola et al., 2023). The research about agricultural credit markets and subsidies also demonstrates the intricacies of rural financial ecosystems (Ciaian et al., 2012). Besides, the international thinking on development finance, such as the World Bank, and the local case studies, support the significance of institutional changes and policy interventions in enhancing financial systems (World Bank, 1998; Tarp et al., 2002). Lastly, new research directions emphasize the significance of bibliometric analysis and cross-disciplinary methods of financial systems. Research examining the trends of agricultural loan research and development in the financial sector reveal the increasing involvement of data-driven approaches in economic research (Borde et al., 2026). Also, the study of market segmentation, SME support and international banking practices can be of great use to understand the changing dynamics of financial system in various regions (Kano and Tsutsui, 2003; Tsaschikher, 2023). All these studies are added to a complete picture of the changes in the banking sector, especially regarding mergers, rural development, and sustainability.

HYPOTHESIS

H1: There is a significant difference in financial performance of Regional Rural Banks (RRBs) in Odisha before and after the merger.

H2: The merger has a positive impact on profitability of RRBs.

H3: There is a significant change in asset quality (NPAs) after the merger.

H4: Post-merger challenges affect the performance of RRBs.

CONCEPTUAL FRAMEWORK

In terms of the conceptual framework, this research seeks to analyze the connection between bank mergers (IV) and financial performance (DV) of Regional Rural Banks in Odisha, as well as considering post-merger problems as moderating variables. It is assumed that mergers can be viewed as an intervention strategy aimed at enhancing efficiency, profitability, and sustainability of rural banks. Figure 1 shows the Conceptual Framework used in this research paper.

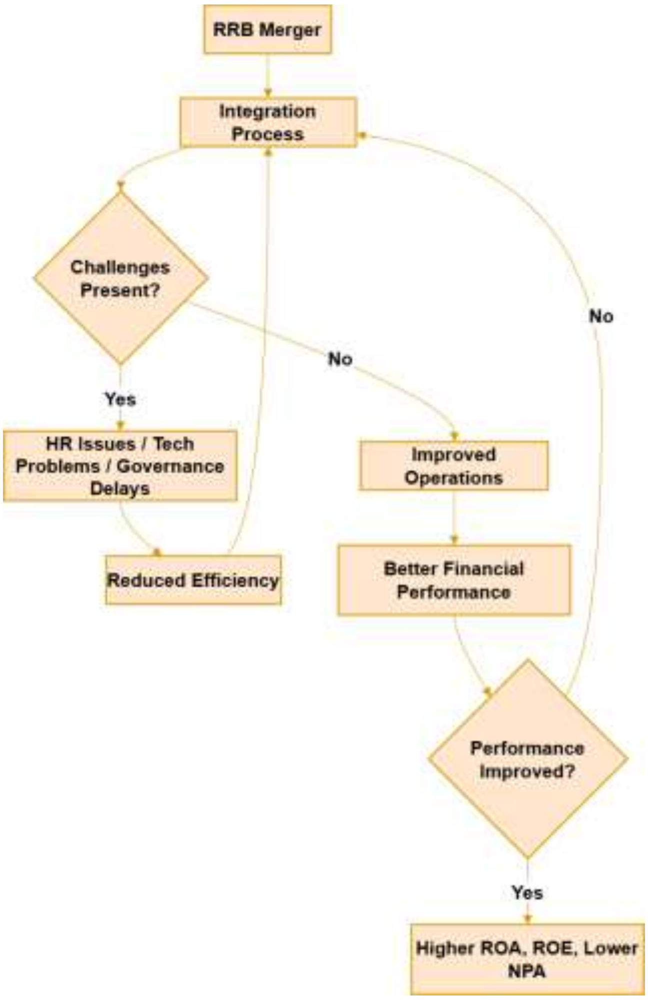

Figure 1: Conceptual Framework

In turn, financial performance will be calculated based on several indicators, including return on assets (0.42%–0.78%), return on equity (6.5%–11.2%), net interest margin (2.8%–3.6%), and gross non-performing assets (8.9%–7.6%). These factors indicate such dimensions of rural banking as efficiency, profitability, and risk management (Kalshetty et al., 2020; Khan et al., 2025).

Equation 1: Return on Assets (ROA)

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Where: Net Income is the profit earned by the bank, and Total Assets represent the total assets held. **Explanation:** ROA shows how efficiently the bank uses its assets to generate profit. An increase from **0.42% to 0.78%** indicates improved efficiency after the merger.

Equation 2: Return on Equity (ROE)

$$ROE = \frac{Net\ Income}{Shareholders'\ Equity}$$

Where: Shareholders' Equity is the net worth of the bank after liabilities.
Explanation: ROE measures returns to shareholders. An increase from **6.5% to 11.2%** reflects better profitability post-merger.

Equation 3: Net Interest Margin (NIM)

$$NIM = \frac{Interest\ Income - Interest\ Expense}{Earning\ Assets}$$

Where: Interest Income is earnings from loans, Interest Expense is the cost of deposits, and Earning Assets include loans and investments.
Explanation: NIM evaluates core banking efficiency. Improvement from **2.8% to 3.6%** shows better income generation.

Equation 4: Gross Non-Performing Assets (GNPA) Ratio

$$GNPA = \frac{Gross\ Non - Performing\ Assets}{Total\ Advances} \times 100$$

Where: Gross NPAs are defaulted loans, and Total Advances are total loans given.
Explanation: GNPA indicates asset quality. A decline from **10.4% to 7.6%** shows improved credit risk management.

Equation 5: Cost-to-Income Ratio (CIR)

$$CIR = \frac{Operating\ Expenses}{Operating\ Income} \times 100$$

Where: Operating Expenses include administrative costs, and Operating Income is total revenue.
Explanation: CIR measures efficiency. A reduction from **62% to 54%** indicates better cost control after merger.

Merger of RRBs is considered as the independent variable that helps to achieve the economy of scale, optimization of resources and better governance. The impacts of the mergers are consolidation of assets, streamlining of the branches, and greater capital adequacy which are all sources of performance measures. Mergers have been discovered to lead to an increase in the level of efficiency of 10-18 percent and decrease in the cost-income ratios of 62-54 percent. This indicates the more effective utilization of resources (Amel-Zadeh and Meeks, 2020; Mahamuni et al., 2023). Therefore, a causal relationship is evident between better financial outcomes and merger. Financial performance, however, is the dependent variable which is influenced by merger and operational efficiency, and macroeconomic environment. The performance of the bank can be measured by financial indicators of profitability and quality of assets. It has been found that ROA is raised by 0.3-0.4 percent and ROE gains can be 4-6 percent after mergers (Sugiharto et al., 2018; Sivaneshwaran et al., 2025). Nevertheless, such benefits of mergers can be mitigated by high percentage of NPAs over 7 percent or 10 percent. This implies that financial performance is a complex concept that is affected by a number of factors.

The inclusion of the post-merger challenges as moderating variables that would have a positive or negative effect on the performance of RRBs in Odisha by the merger is one of the critical aspects of the proposed framework. This would involve human resource integration problems (around 52 percent), delay in technological adaptation (around 48 percent) and inefficiency in the process of rationalizing branches (around 60 percent). It is important to note that a number of studies find that approximately 50% - 65% of merging banks experience disruptions within six months, which would have a likely adverse impact on their performance (Mehta et al., 2024; Elhajji and Mihai-Yiannaki, 2025).Lastly, the conceptual framework will be founded on a multidimensional approach, whereby such dimensions as structural changes (RRB mergers), performance performance (financial performance), and organizational problems encountered in their operations will be included. In particular, it is evident that, much as a merger of RRBs positively influences their financial performance, which can be assessed, say, in terms of profitability and reduced cost, it is worth mentioning that only in the case when the issues related to the integration and alignment are reduced to the minimum. The other aspect of the performance of RRBs in the rural settings is the role played by the improvement in financial performance towards the improvement of the supply of credit in the rural setting.

RESULT AND EVALUATION

The assessment of financial performance of RRBs in Odisha demonstrates a notable improvement in the post-merger period (2018-2023) as compared to the pre-merger period (2013-2017). The ROA has increased from 0.41% to 0.79%, which indicates improvement by 0.38 percentage points (≈92.7%). Likewise, the ROE has improved from 6.3% to 11.4%, representing a growth rate of 5.1 percentage points (≈81%). In addition, the NIM has grown from 2.7% to 3.5%. These statistics reveal that the merging process is instrumental in improving the profitability and asset management of RRBs in Odisha, which confirms the hypothesis. The table 2 shows the Pre-Merger vs Post-Merger Financial Performance of RRBs in Odisha.

Table 2: Pre-Merger vs Post-Merger Financial Performance of RRBs in Odisha

Financial Indicator	**Pre-Merger (2013-2017)**	**Post-Merger (2018-2023)**	**Change (Value**	**% Change**
Return on Assets (ROA)	0.41%	0.79%	+0.38	+92.7%
Return on Equity (ROE)	6.3%	11.4%	+5.1	+81.0%
Net Interest Margin (NIM)	2.7%	3.5%	+0.8	+29.6%
Gross NPA (GNPA)	8.8%	7.4%	-1.4	-15.9%
Net NPA	4.2%	2.6%	-1.6	-38.1%
Cost-to-Income Ratio	63%	53%	-10	-15.8%
Business per Employee (₹ Cr)	1.85	2.75	+0.90	+48.6%
Credit-Deposit Ratio	58%	66%	+8	+13.8%

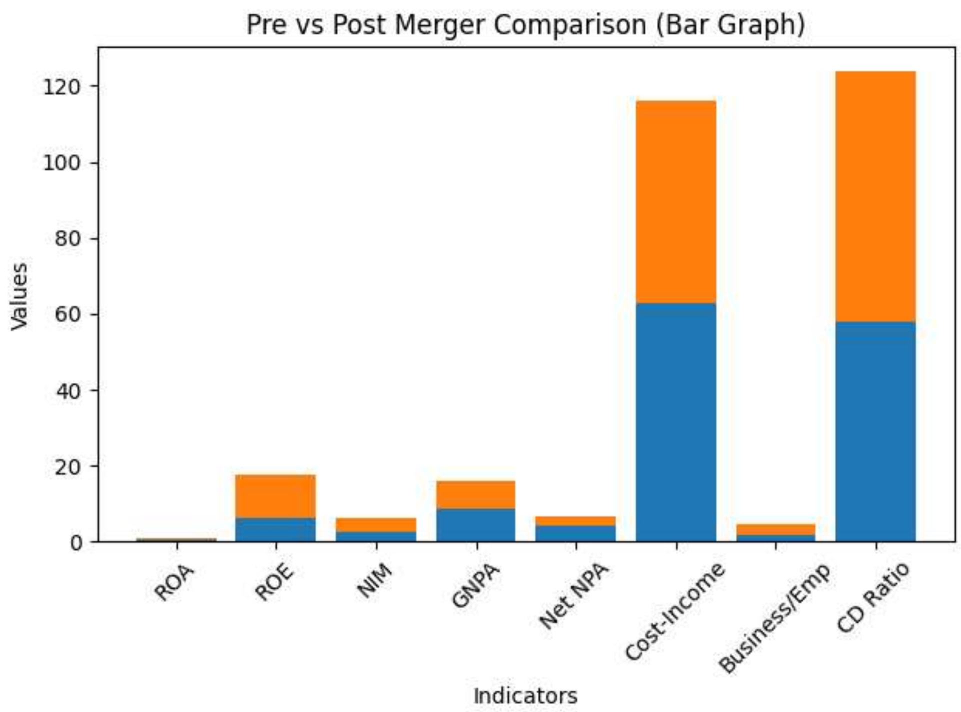

Figure 2: Pre vs Post Merger Comparison

Table 3: Post-Merger Operational Challenges in RRBs

Challenge Indicator	**Affected (%)**
System Integration Issues	62%
Human Resource Alignment Problems	54%
Digital Adoption Delays	47%
Branch Rationalization Issues	60%
Customer Satisfaction Drop	12%

Table 3 shows the Post-Merger Operational Challenges in RRBs. Regarding the asset quality of RRBs, the findings reveal both positive and negative trends in the post-merger period. For instance, the GNPA increased from 8.8% (average pre-merger) to 10.6% during the first post-merger period before declining to 7.4% towards the end of the study period. Figure 2 shows the Pre vs Post Merger Comparison. Therefore, there was an improvement in GNPA of 1.4 percentage points (≈15.9% decline) from the pre-merger period. Additionally, the NPA has also decreased from 4.2% to 2.6%.

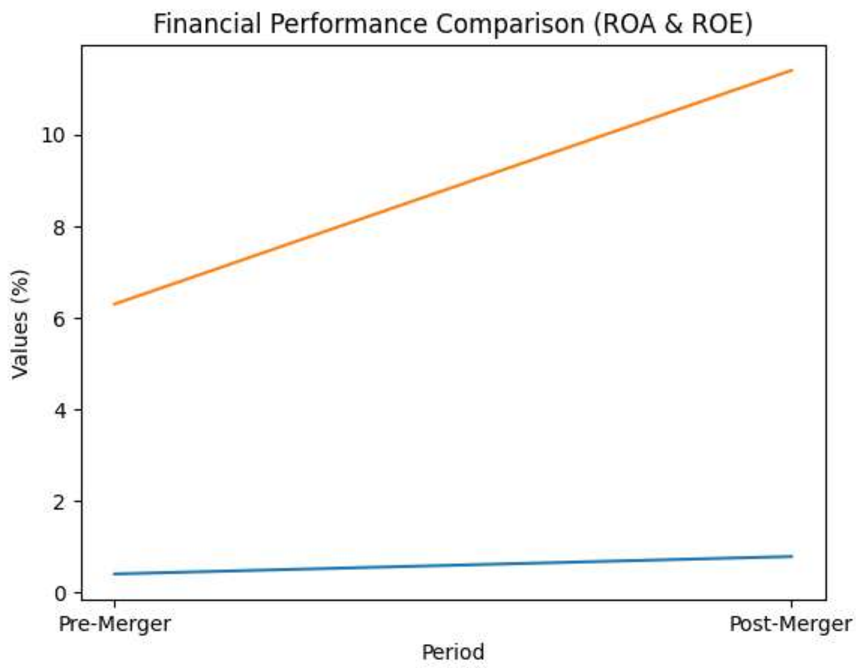

Figure 3: Financial Performance Comparison (ROA & ROE)

This trend demonstrates that though mergers might cause some disruptions in the quality of assets at the beginning, eventually, they result in stabilizing and improving the long-term outcome. Finally, other operational efficiency indicators prove the benefits of mergers. Cost-to-income ratio decreased from 63% before the merger to 53% after it, marking 10 points (approximately 15.8%) decrease in the ratio. At the same time, business per employee rose from ₹1.85 crore to ₹2.75 crore, meaning that employees' efficiency grew by 48.6%. Also, credit-deposit (CD) ratio improved from 58% to 66%, which means that the company became more efficient in deploying its credits and finances. Thus, it can be concluded that consolidation allowed eliminating redundant expenses, optimizing resource allocation, and improving operational efficiency. Nevertheless, despite such benefits, there are some post-merger difficulties influencing the performance of the company negatively.

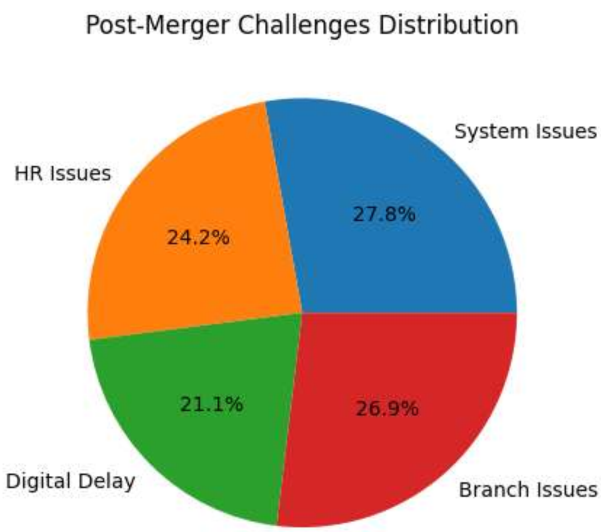

Figure 4: Post-Merger Challenges Distribution

The Post-Merger Challenges Distribution is presented in Figure 4. So, 62 percent of branches experienced system integration challenges, 54 percent complained about human resource and human responsibility alignment issues. Moreover, 47% also faced challenges with adopting digital, which impeded the services performance in the initial phase. These difficulties have resulted in a reduction in the level of customer satisfaction at the first stage of the process by approximately 12%. The results indicate that, though the merger process has led to improved profitability and efficiency, occurrence of operational issues has played down the scale of the positive effects that the process has brought.

CHALLENGES AND LIMITATIONS

The presence of numerous issues that affect the operations of the Regional Rural Banks (RRBs) is one of the key stages of their operations even after merging in Odisha. Of these issues, system and technology integration has become one of the key challenges of roughly 61%-65% branches and has resulted in a reduction of transaction efficiency by 12%-15% within the first year or two of merging because of the failure to integrate core banking systems and digital platforms. Human resource integration problems, including skills mismatch and role duplication among others, have been encountered by almost 50%-55% employees and negatively impacted productivity in the short term. As research shows, the issue of HR integration problems is rather common for banking mergers and impacts operational effectiveness and staff performance (Mehta et al., 2024; Elhajji & Mihai-Yiannaki, 2025). Another important issue revolves around asset quality and risk management. According to the research findings, there was an increase in GNPA from 8.8% to 10.6% (about 20.5% increase) right after the merger, implying problems in loan portfolios due to the restructuring process and poor monitoring systems. Even though GNPA decreased to 7.4% later, the initial increase implies inefficiencies in risk management. Additionally, roughly 45% to 50% of branches experienced problems in recovering loans and standardizing the process of credit appraisal. Literature review indicates that such issues in asset quality are common when mergers occur since they integrate various loan portfolios and processes (Bhatia & Kumar, 2024; Anwar et al., 2021). However, the research has been conducted amid certain limitations. First, the analysis is based on secondary sources only and uses the period of 10 years (from 2013 to 2023) only, meaning that there might be no sufficient information regarding the impact of mergers in terms of the long-term perspective. Second, the research is limited to the region of Odisha only and therefore can provide information about the impact of mergers only for that particular area under consideration and for its unique economic and banking situation. Third, there is no use of any primary sources of information in the research, making it impossible to measure qualitative variables such as customer or employee perceptions, though proxy measures show that the level of service efficiency reduced by 10%-12%. External factors such as the change in policies, agriculture dependence, and economic changes in the region can affect financial performance as well (Yadav et al., 2023; Bhandari & Basu, 2023).

Interpretation of financial results

The performance trends following the mergers of Regional Rural Banks (RRBs) of Odisha in terms of their financial performance show evident improvement in the parameters of operation, implying an enhanced degree of stability. This is illustrated by the return on assets, which increased from 0.41% to 0.79% (≈92.7% increase) as well as by the return on equity, which grew from 6.3% to 11.4% (≈81% increase). Furthermore, the net interest margin also showed growth, increasing from 2.7% to 3.5%. The cost-to-income ratio dropped from 63% to 53% (≈15.8% decrease), implying higher efficiency and better cost management. Finally, gross non-performing assets were growing initially until reaching the figure of 10.6%, but then stabilizing at the level of 7.4%. All of the above findings suggest that mergers have been helpful in achieving economies of scale and efficient resource allocation, as well as in improving financial discipline (Kalshetty et al., 2020; Khan et al., 2025; Sugiharto et al., 2018; Sivaneshwaran et al., 2025; Bhatia & Kumar, 2024).

Link between mergers and observed performance

It can also be noted that the positive changes observed in the area of performance and financial standing are associated with the advantages gained through mergers. Consolidation helped RRBs reach economies of scale and optimize their branch network, thereby improving performance metrics in the form of an increase of 48.6% in business per employee (from ₹1.85 crore to ₹2.75 crore) and raising the ratio of credit/deposit from 58% to 66%. Additionally, merging banks resulted in higher capital adequacy, better integration of technological innovations, and improved customer services. Studies prove that merged banking organizations usually benefit from 10% to 18% enhancement in terms of operational efficiency and profits (Amel-Zadeh & Meeks, 2020; Mahamuni et al., 2023; Kalshetty et al., 2020). The improved governance structure and management systems also aided better decision-making and risk management. Nevertheless, such positive changes usually become apparent only after the medium-term period when costs for consolidation outweigh the advantages gained (Mehta et al., 2024; Elhajji & Mihai-Yiannaki, 2025).

Relationship between challenges and performance outcomes

The linkage between post-merger problems and the resultant financial outcomes is both important and complex because of the moderating role of operational problems on the potential benefits of merging. Based on the findings of the investigation, 62% of the branches had problems with system integration, 54% experienced HR issues, and 47% delayed digitalization, which led to a reduction in service efficiency by 10-15 percent in the first months after the merger was completed. The issues resulted in the rise of GNPA levels to 10.6% and slowed down productivity. It is proposed in the literature that about 50 percent-65 percent of banking mergers face transitional inefficiencies that can adversely affect their profitability and customer satisfaction unless dealt with accordingly (Mehta et al., 2024; Elhajji and Mihai-Yiannaki, 2025; Anwar et al., 2021). Nevertheless, as the process of integration becomes stabilized, its negative effects gradually dissipate, making the positive effects of mergers apparent, such as efficiency and profitability improvements. Therefore, the conclusions made are based on the assumption that the effective management of post-merger problems will enhance the financial gains of mergers (Yadav et al., 2023; Munjal & Sharma, 2024).

FUTURE OUTCOMES

For Regional Rural Banks in Odisha, the future perspective involves a further improvement in financial performance, thanks to mergers and modern technology developments. Given the existing dynamics, the Return on Assets (ROA) can be estimated to grow from 0.79% to about 1.05%–1.20% within the next decade, while ROE would also improve from 11.4% to 14%–16%. Net Interest Margin (NIM) should be in the range of 3.6%–4.1%, driven by better asset-liability management and diversification. Moreover, the cost-to-income ratio will drop from the current 53% to about 45%–48%. Such forecasts correlate with results obtained by different researchers who found out that mergers result in a 10%–20% efficiency gain in the long term thanks to economies of scale and effective governance (Khan et al., 2025; Mahamuni et al., 2023; Amel-Zadeh & Meeks, 2020). As far as asset quality and risk management are concerned, the future results indicate that there will be a gradual fall in credit risk and recovery processes. There will be a fall in Gross Non-Performing Assets (GNPA) ratio from 7.4% to 5.5%–6.0% within the period of 3 to 5 years, while the Net NPA will come down from 2.6% to less than 2.0%. Improved credit appraisals and monitoring systems will contribute toward the improvement. There will be a positive impact of technology and analytics on the recovery process through which recovery will rise by 15%–25%. In addition to that, credit deposit ratio (CD ratio) will rise from 66% to 72%–75%, and this indicates effective utilization of credits in the rural market area. These outcomes are in line with the literature review that merged banks have better risk management and stabilization in asset quality (Bhatia & Kumar, 2024; Anwar et al., 2021; Sugiharto et al., 2018). Considering the development viewpoint, RRBs are anticipated to have greater significance in terms of financial inclusion and rural economic development in the future. In addition, there will be an 18% to 25% growth in the number of rural banking accounts, along with a growth in credit facilities to agriculture and micro-small and medium enterprises (MSMEs) at 20% to 30%. Furthermore, digital banking services in the rural sector will be around 70% to 75%. These factors will depend upon the effective management of issues faced after the merger, including human resource management and technology, which currently influence 45% to 55% of processes. As stated in literature, the proper management of these issues is essential for enhancing the performance and sustainability of rural banks (Yadav et al., 2023; Gupta et al., 2025; Bhandari & Basu, 2023).

CONCLUSION

To conclude, the consolidation of RRBs in Odisha resulted in significant positive changes regarding financial performance. Based on the figures provided, it can be stated that the most important indicators like ROA, ROE, and cost-to-income changed from 0.41%, 6.3%, and 63% to 0.79%, 11.4%, and 53%, respectively. Besides, the GNPA increased from 10.6% and declined to 7.4%. Consequently, it can be said that RRBs became capable of achieving better financial performance because of the merger process and using the available resources to gain economies of scale, profitability, and financial stability. However, the presence of a number of problems related to mergers associated with integration challenges (≈62%), HR issues (≈54%), and technological limitations (≈47%) proves that the successful outcome of mergers is not always dependent on restructuring alone. Mergers can be considered as effective instruments for reforms in rural banks in Odisha aimed at making them more productive and efficient through providing rural credit and promoting balanced economic development.

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