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Research Article

Sectoral Analysis of Economic and Operating Efficiency Post Merger in the Indian Banking and IT Sector – A Quantitative Research with Special Focus to India

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ABSTRACT

Mergers and acquisitions (M&A) are strategic management decisions aimed at enhancing corporate performance by consolidating resources, reducing operational costs, and achieving economies of scale. The study examines the sectoral analysis of economic and operating efficiency in the Indian banking and IT sector post-merger, utilizing quantitative research to evaluate the performance changes. The objective of the study is to investigate the pre- and post-merger financial performance of selected banks and IT firms in India and to determine the influence of M&A on the Non-Performing Assets (NPA) ratio of Indian banks and IT firms. Additionally, it analyze the effects of the M&A announcement decision on the security prices of selected banks and IT firms. The research focuses on key financial metrics including liquidity position, non-performing assets (NPA), total investments, total assets, and security prices to assess the impact of M&A on economic and operational efficiency. Furthermore, the study highlights substantial increases in security prices for both banking and IT firms post-merger, indicating heightened investor confidence and market perception of enhanced operational synergies. The findings state that there is a significant difference in the financial performance of selected banks and IT firms in India before and after mergers, and M&A has a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger. It also states that the M&A announcement decision has a positive effect on the security prices of selected banks and IT firms. These trends underscore the effectiveness of mergers in driving financial performance and operational efficiencies within these sectors of the Indian economy. Overall, the research contributes to the understanding of how strategic consolidations can lead to economic growth and improved operational effectiveness in the banking and IT sectors of India.

Keywords: Merger & Acquisition, Economic efficiency, operating efficiency, Liquidity, Non Performing Asset (NPA), Security price.

INTRODUCTION

Background of the study

Mergers and acquisitions (M&A) are strategic agreements made by companies to enhance operational efficiency and competitive advantage in the market (Dhingra, 2019). A merger typically comprises two companies of related size joining forces to form a new entity, while an acquisition involves one company purchasing another, often resulting in the absorbed company no longer existing as an independent entity (Gandhi, Chhajer, & Mehta, 2018). The main goal of these transactions is to create synergies that result in a combined value greater than the sum of the individual firms, providing both financial and strategic advantages (Feldman & Hernandez, 2022).

The definition of a merger is when two or more banks combine to form either a new entity or a combination of both (Das & Deo, 2022). Typically this occurs between banks of equal size, known as a "merger of equals" (Agarwal, Vichore, & Gupta, 2019). On the other hand, an acquisition involves the combination of two or more banks where the target bank ceases to exist (Ambica, 2017). Generally, an efficient bank will acquire an inefficient bank. M&A transactions involve different payment modes such as cash, stock or a combination of both (Andriuškevičius & Štreimikienė, 2021). M&A is a business strategy in which the ownership, business structure, liabilities, assets as management of the bank are transferred or combined (Soni, Kar, & Bhasin, 2022). The main goal of engaging in M&A is to enhance commercial potential and create more value compared to operating as an individual entity (Gupta, Raman, & Tripathy, 2023). More specifically, M&A involves corporate strategy related to the buying, selling or combining of banks in a given industry to enable rapid growth without creating a new business entity (Ullah, Nor, & Seman, 2021). The banking sector holds a significant position in the economic development of a nation (Madray, 2020). Factors such as economic reforms, deregulation and market liberalisation have increased competitiveness in the banking industry (Patel, 2018). This developing competition has compelled banks to focus on financial strength and market capture (Mantravadi, 2020). M&A plays a fundamental role in helping companies grow faster than their competitors and ensuring weaker companies are swiftly absorbed (Sharma & Garg, 2022). M&A is often seen as a way to maintain economic stability in emerging countries (Shah & Butt, 2020). Addressing key issues in the plan is an important consideration in a merger (Mehrotra & Sahay, 2022). The success of a company's strategy largely depends on processes, people and technology (Poddar, 2019). M&A is a integral part of a healthy economy as it allows companies to provide returns to investors and owners (Sengar, Badhotiya, Dobriyal, & Singh, 2021).

The emergence of globalization, liberalization, and significant technological advancements worldwide over the last decades of the twentieth century resulted in widespread corporate restructuring to maintain competitiveness in the global market (Soni et al., 2022). The challenges and opportunities presented by these developments have spurred an increase in foreign direct investment (FDI), including M&As. M&A in the information technology sector represent a strategic approach for companies to enhance their competitive edge and foster innovation (Borodin, Sayabek, Islyam, & Panaedova, 2020). These transactions often involve the combination of established firms with emerging competitors or innovative startups, allowing larger tech companies to rapidly acquire new technologies and talent (Chakraborty & Kattuman, 2023). In this dynamic landscape, mergers can create synergies that drive growth and efficiency, while acquisitions often aim to eliminate competition and secure market dominance (Chatterjee & Dandapat, 2020). As the tech industry evolves, M&A activities have become crucial for companies seeking to adapt to changing market demands, capitalize on new opportunities, and maintain their leadership positions in an increasingly competitive environment (Katz, 2021).

In recent years, the Indian information technology sector has witnessed significant mergers and acquisitions (M&A) as companies strive to enhance their competitive edge and foster innovation (Bianconi & Tan, 2019). For instance, in 2023, Zomato merged with Blinkit in an all-stock deal valued between $700 million and $750 million, allowing Zomato to expand its grocery delivery services (Isha & Venkata, 2022). Similarly, Reliance Industries completed its acquisition of Future Group's retail and logistics businesses for approximately $3.4 billion, strengthening its position in the retail market. In a strategic move to bolster its electric vehicle capabilities, Tata Motors announced a partnership with Tesla in 2024, where Tesla acquired a 20% stake in Tata's EV division for $2 billion (Hossain, 2021). Additionally, Kotak Mahindra Bank acquired Sonata Finance for Rs. 537 crore ($65 million) to enhance its microfinance offerings. These transactions reflect the dynamic nature of the Indian tech landscape, where established firms are actively pursuing M&A to adapt to market changes and secure their leadership positions (Ishwarya, 2019).

Conceptual frame work

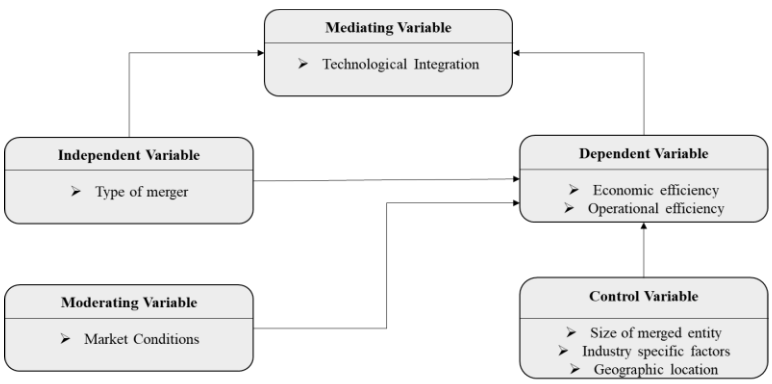

Figure 1 Conceptual Frame work of the research

Significance of the study

The study is significant as it provides a thorough understanding of how mergers impact economic and operational efficiencies in the Indian banking and IT sectors. Through examination of various merger types and their consequences, the present research aims to equip stakeholders such as policymakers, corporate leaders, and investors with crucial insights to aid in strategic decision-making. Moreover, the focus on technological integration and market conditions in the study will improve comprehension of the dynamics involved in post-merger performance. Ultimately, the aim of this research is to contribute to the existing body of knowledge on M&A while offering practical recommendations to enhance efficiency and sustainable growth in these crucial industries. Furthermore, the study's findings could help in identifying best practices for successful merger integration, consequently reducing risks linked to such corporate strategies. Through analysis of performance indicators before and after mergers, the research can pinpoint areas for enhancement and innovation. This study might also serve as a reference point for future research in similar circumstances, encouraging a more in-depth exploration of sectoral efficiencies in emerging markets. The overall goal is to enable informed policy-making that bolsters economic stability and growth in India's banking and IT sectors.

Problem identification

The study addresses various crucial issues surrounding the impact of mergers on efficiency in these sectors. Initially, it seeks to determine whether such mergers genuinely enhance operational efficiency or inadvertently reduce competition, ultimately harming consumers. Assessing economic and operational efficiency post-merger presents challenges, as conventional metrics may fail to encapsulate the complexities of market dynamics. The distinct characteristics inherent to the banking and IT sectors further complicate this evaluation, necessitating a thorough exploration of sector-specific elements. Additionally, the role of technological integration in boosting operational efficiency is often neglected, highlighting a significant knowledge gap regarding its importance. Furthermore, the existing regulatory framework may inadequately address potential anti-competitive effects, which could hinder beneficial mergers. Addressing these issues is essential for providing valuable insights that can inform policymaking and strategic planning in these vital sectors.

Research Objective

1. To investigate the pre- and post-merger financial performance of selected banks and IT firms in India.
2. To determine the influence of M&A on the Non-Performing Assets (NPA) ratio of Indian banks and IT firms.
3. To analyze the effects of the M&A announcement decision on the security prices of selected banks and IT firms

Research hypothesis

H1: There is significant difference in the financial performance of selected banks and IT firms in India before and after mergers.

$H1_0$: There is no significant difference in the financial performance of selected banks and IT firms in India before and after mergers.

H2: M&A have a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger.

$H2_0$: M&A do not have a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger.

H3: The M&A announcement decision has positive effect on the security prices of selected banks and IT firms.

$H3_0$: The M&A announcement decision has negative effect on the security prices of selected banks and IT firms.

Paper Organisation

Section 1 represents the significance, objective, and problems that are identified in the study of Sectoral Analysis of Economic and Operating Efficiency Post Merger in the Indian Banking and IT Sector: A Quantitative Research with Special Focus on India. The prevailing studies related to the present study and research gaps are described in Section 2. Section 3 depicts the research methodology, such as the study area, research design, research instrument, and quantitative analysis of the study. The outcomes of the study are defined in Section 4. Section 5 presents about the discussion portion of the study, and Section 6 represents the conclusion and implications of the study.

LITERATURE REVIEW

The prevailing study (Aggarwal & Garg, 2022) analyzed the effects of M&As on the accounting-driven performance of acquiring companies in India, enhancing the comprehension of how such strategic choices affect financial results. The aim of the study is to assess variations in financial performance metrics like profitability, liquidity, and general financial well-being after M&A transactions. The approach includes a quantitative assessment utilizing paired sample t-tests to evaluate significant financial ratios from three years before and three years after the mergers. The results demonstrate that M&A typically result in notable enhancements in performance indicators such as return on equity (ROE) and return on assets (ROA), suggesting a beneficial effect on the financial performance of acquiring companies over the long term. Nonetheless, the research also highlights certain cases where financial performance remained unchanged, indicating variability in results influenced by aspects like industry traits and merger implementation.

The preceding study (Darayseh & Alsharari, 2023) explores new issues concerning mergers in the banking sector, emphasizing the intricacies and obstacles that arise from these consolidations. The aims of the research are to recognize key factors that affect the success of bank mergers and to examine their effects on operational efficiency, regulatory adherence, and general market dynamics. The approach involves a qualitative assessment, employing case studies from different banking mergers and conversations with industry specialists to collect perspectives on current trends and obstacles encountered by banks in the merger process. The results indicate that although mergers can improve operational efficiencies and strengthen market presence, they frequently face considerable obstacles like cultural integration, regulatory issues, and the necessity for technological alignment. Furthermore, the research emphasizes the significance of strategic planning and efficient communication in overcoming these obstacles to attain positive merger results.

The existing study (Sant & Bhattacharya, 2020) offers a detailed perspective on M&A's in the banking industry of BRICS countries, emphasizing the distinct challenges and opportunities encountered by these economies. The goals of the study involve examining trends in M&A activities, pinpointing main factors contributing to these consolidations, and evaluating their effects on financial results and market stability within the banking sector. The approach involves a qualitative analysis that includes case studies from different BRICS nations and a literature review to emphasize shared themes and challenges concerning M&A's in the banking sector. The results show that M&A in BRICS countries are frequently driven by the desire for market growth, enhanced competitiveness, and greater operational efficiency. Nonetheless, the research also highlights major obstacles like regulatory challenges, cultural disparities, and integration problems that may obstruct the success of these mergers. Additionally, it highlights that although M&A's may result in improved financial performance and market visibility, their success depends on strategic coherence and efficient post-merger integration processes.

The prior study (Gupta et al., 2023) examines how M&As affect the financial outcomes of companies in India's construction and real estate sector. The preceding study aims to assess the impact of M&A's on essential financial indicators like profitability, return on assets, and overall financial stability in this industry. The approach used is a quantitative analysis that leverages financial data from chosen companies prior to and following their merger or acquisition activities, using statistical methods to evaluate shifts in performance metrics. The results demonstrate that mergers and acquisitions typically result in notable enhancements in financial outcomes, especially regarding profitability and resource efficiency, indicating that tactical consolidations can improve competitive strengths in the construction and real estate sectors. Additionally, the research emphasizes that although numerous companies see favourable results after M&A, the effectiveness of these deals is frequently affected by factors like market conditions, integration methods, and management tactics. The study highlights the significance of comprehensive due diligence and successful post-merger integration to unlock the complete value of M&A endeavours.

The study (Borodin et al., 2020) examines how M&As influence the financial outcomes of businesses, focusing on an essential aspect of corporate finance. The objective of the study is to examine the impact of M&A's on crucial financial indicators like profitability, liquidity, and general financial stability across different sectors. The approach incorporates a quantitative examination of financial figures from chosen firms that have experienced M&A's, using financial ratios before and after the merger to evaluate performance changes during a defined timeframe. The research utilizes statistical methods, such as paired sample t-tests, to assess the significance of noted shifts in financial performance. The results show that the effect of M&A's on financial performance is primarily unfavourable, as numerous companies see little to no notable enhancement in profitability or liquidity after the merger. In particular, the research indicates that a significant number of companies do not realize the expected financial synergies, with some even experiencing a decline in vital performance metrics like return on capital employed (ROCE) and earnings per share (EPS). This indicates that although M&A's are frequently sought for expansion and efficiency, they do not consistently deliver the anticipated advantages and may result in unsatisfactory results.

The prevailing study (Rai, Yadav, Mallik, & Gupta, 2021) examines how bank mergers affect shareholder wealth, particularly in Indian public sector banks, employing an event study approach to evaluate the financial consequences of these mergers. The goals of the study are to examine the impact of merger announcements on stock prices and shareholder value, with a specific emphasis on cumulative abnormal returns (CAR) around the dates of the announcements. The approach entails gathering stock price information for chosen public sector banks, with an event window that spans from 15 days prior to 15 days following the merger announcement. The researchers utilize statistical methods to determine abnormal returns and evaluate their significance. The results show that announcements of mergers typically produce positive cumulative abnormal returns for shareholders of acquiring banks, suggesting an increase in shareholder wealth. Nonetheless, the research also points out that a considerable percentage of these returns are statistically insignificant, indicating that although some shareholders profit, many do not attain considerable benefits from these mergers. This is consistent with earlier studies showing varied results concerning shareholder wealth in M&A within the banking industry.

The preceding study (Yadav & Jang, 2021) examines the effects of mergers on HDFC Bank's financial performance through a CAMEL analysis framework, assessing the bank's performance in terms of Capital adequacy, Asset quality, Management quality, Earnings, and Liquidity. The goals of the study are to evaluate the influence of the merger on these crucial financial metrics and to analyze the comprehensive effect on the operational efficiency and stability of HDFC Bank. The approach consists of a comparative evaluation of financial information prior to and following the merger, employing CAMEL metrics to assess variations in performance during a defined timeframe. The results show that the merger has typically resulted in enhancements in HDFC Bank's financial performance across various CAMEL dimensions. In particular, the bank's capital adequacy ratio has stayed robust, signifying a firm safeguard against possible losses. Nonetheless, there are worries about asset quality since the gross non-performing asset (GNPA) ratio has seen a minor rise after the merger. The research also emphasizes gains in management efficiency and profits, showcasing a significant rise in return on assets (ROA) and net interest margins (NIM), indicating improved profitability. Furthermore, liquidity ratios have demonstrated stability, indicating the bank's capacity to efficiently fulfill its short-term commitments.

The existing study (Darayseh & Alsharari, 2023) explores the factors that drive M&As within the banking industry, emphasizing both internal and external elements that affect these strategic choices. The goals of the study are to pinpoint essential factors influencing M&A activities and to comprehend their effects on bank performance and market dynamics. The approach includes an empirical examination via a structured survey given to banking experts, supplemented by statistical methods like regression analysis to assess the links between identified factors and M&A results. The results indicate various key elements affecting M&A choices, such as financial results, market rivalry, regulatory structures, and technological progress. Particularly, the research emphasizes that banks tend to engage in M&A's when they seek to increase their market share, realize economies of scale, or react to competitive pressures. Moreover, it was discovered that regulatory alterations greatly influenced M&A activities, causing banks to adjust their strategies in accordance with changing compliance demands. The study also suggests that effective mergers frequently relate to comprehensive due diligence and efficient integration methods.

The prior study (Sengar et al., 2021)) observes the aftermath of mergers on the performance of banks in India, concentrating on how mergers affect different financial indicators and the overall stability of banks. The aim of the study is to examine the variations in financial performance metrics like profitability, liquidity, and asset quality after mergers of Indian banks. The approach consists of a quantitative examination utilizing financial information from chosen banks prior to and following their merger actions, applying statistical methods to assess key performance ratios over time. The research employs various financial indicators, such as return on assets (ROA), return on equity (ROE), and net interest margins, to assess the effects of mergers. The results indicate that post-merger performance differs greatly across banks, as some see enhanced profitability and operational efficiency, whereas others exhibit drops in essential metrics. The research suggests that banks that successfully merge operations and align their strategic objectives tend to attain superior financial results compared to those facing integration difficulties. Moreover, the study emphasizes that although certain banks enhanced their capital adequacy and lowered non-performing assets (NPAs), others encountered rising NPAs and diminished profitability after the merger.

The study (Ullah et al., 2021) explores how M&As affect the operational efficiency of the Islamic banking industry, noted for its distinct regulatory and ethical factors. The present study aims to examine the impact of M&A's on operational metrics like efficiency, profitability, and market share in Islamic banks. The approach used encompasses empirical research techniques such as cross-sectional pooled regression and panel data regression analysis, employing a sample of 10 Islamic banks from six nations during the timeframe from Q1 2009 to Q4 2018. The operational efficiency is evaluated using accounting-related metrics, whereas market structure is represented by the Herfindahl-Hirschman Index (HHI) and concentration ratios. The results illustrates that M&A's typically have a varied effect on operational performance within the Islamic banking sector. In particular, larger bank dimensions adversely impact operational performance after a merger, suggesting that greater scale does not necessarily result in enhanced efficiency or profitability. In contrast, the research indicates that a concentrated market framework can improve operational efficiency for bigger banks after mergers and acquisitions. These findings indicate that although M&A's can offer prospects for growth and market enlargement, they also present challenges associated with the integration and oversight of larger organizations.

Research Gaps

1. The prevailing study (Gupta et al., 2023) lacks in examining the long-term impacts of M&As on operational efficiency and market share, particularly in the construction and real estate sectors.
2. The preceding study (Borodin et al., 2020) needs more exploration into the particular elements that influence the success or failure of M&As, especially regarding industry-specific dynamics and the processes of organizational integration.
3. The existing study (Rai et al., 2021) is inadequate in identifying long-term impacts of bank mergers on share value, especially concerning market conditions and economic factors.

Research Questions

1. How does the financial performance of selected banks and IT firms in India change before and after mergers, specifically in terms of liquidity, profitability, and operational efficiency?
2. What is the impact of M&A on the NPA ratio of Indian banks and IT firms?
3. How do macroeconomic factors affect the operational efficiency of merged entities in the Indian banking and IT sector?

METHODOLOGY

Study area

The study area encompasses the Indian banking and IT sectors, specifically focusing on the impact of mergers on economic and operational efficiency. The analysis will involve examining different banks and IT firms in India, evaluating their performance metrics both before and after mergers. The research aims to use quantitative methods to understand how mergers affect efficiency levels, productivity, and overall service quality. The study will primarily focus on India, where the banking sector has experienced significant consolidation in recent years, alongside rapid advancements in information technology that have revolutionized operational procedures (Pandey & Pandey, 2021).

Research design

The research design is supposed to implement several processes, including tools and procedures to obtain data for the research purpose. A well-designed research is mandatory to acquire reliable and valid outcomes. It incorporates the appropriate method of approach for the present study (Baur, 2019). The current study employs a quantitative research method. For the quantitative method, data are congregated with the aid of secondary data which are on the basis of study variables and queries to implement the analysis. The below figure 2 describes the research design of the study.

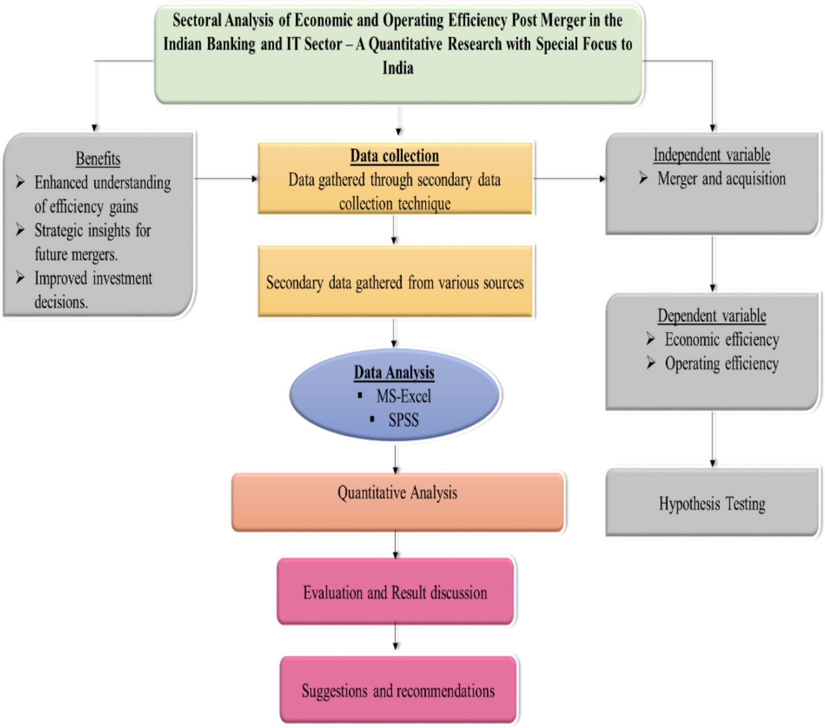

Figure 2 Research Design

Research instrument

Performance metrics analysis is the systematic evaluation of measurable indicators used to assess how well an organization is meeting its goals. This involves gathering a range of performance metrics, such as financial ratios, operational efficiency measures, customer satisfaction scores, and technology adoption rates, and performing statistical analysis and benchmarking to understand the data (Pederson, Vingilis, Wickens, Koval, & Mann, 2020). By analyzing these metrics, organizations can identify their strengths and weaknesses, allowing them to make better decisions on resource allocation, process enhancements, and strategic planning. Ultimately, this analysis provides valuable insights that help improve operational performance, leading to better financial results and increased customer satisfaction. Regular monitoring of these metrics encourages a culture of accountability and continuous improvement within teams, enabling organizations' to adapt quickly to market changes and customer demands, ensuring long-term success and competitiveness in the industry. By using advanced analytics tools, businesses can gain deeper insights that guide proactive growth and innovation strategies(Pederson et al., 2020).

Data collection

The present research utilizes secondary data collection techniques for analysis. It is usually collected from a range of sources, such as the annual reports of Indian banks, financial statements found on official bank websites, and industry research papers. This type of secondary data forms the basis for comprehending economic and operational trends both pre- and post-mergers. Moreover, it can also include government reports, economic surveys, and databases that monitor crucial performance indicators specific to the banking and IT industries. By making use of this existing data, the research can identify the effects of M&A on sector performance without having to conduct extensive primary data collection (Taherdoost, 2021).

RESULTS AND DISCUSSION

Hypothesis 1:

H1: There is significant difference in the financial performance of selected banks and IT firms in India before and after mergers.

$H1_0$: There is no significant difference in the financial performance of selected banks and IT firms in India before and after mergers.

Liquidity Position

It is the capability of banks to repay and recompense short term commitments. It analyses the interest risk rate and liquidity risks related with bank's functions. Liquidity is assessed through the formulas of liquidity coverage ratio and credit deposit ratio.

$$liquidity\ coverage\ ratio = \frac{High\ qulaity\ liquid\ assets}{total\ net\ cash\ flows} \times 100$$

$$Credit\ deposit\ ratio = \frac{Total\ advances}{total\ deposits} \times 100$$

Table 1. Liquidity Position of SBI

Financial year	Liquidity Coverage Ratio (in %)	Credit Deposit Ratio (in %)
2013	80.12	86.86
2014	80.02	86.76
2015	81.19	82.45
2016	75.23	84.57
2017	144.06	76.83
2018	134.05	71.49
2019	125.79	75.08
2020	143.59	71.73
2021	158.6	66.54
2022	160.56	67.03

The analysis of the Liquidity Coverage Ratio (LCR) and Credit Deposit Ratio (CDR) for SBI from 2013 to 2022 reveals significant differences in financial performance before and after the merger. During the pre-merger period (2013-2017), the LCR fluctuated, peaking at 144.06% in 2017 after declining to 75.23% in 2016, indicating a strategic shift towards enhancing liquidity just prior to the merger. Meanwhile, the CDR decreased from 86.86% in 2013 to 76.83% in 2017, suggesting a more conservative lending approach. In contrast, the post-merger period (2018-2022) saw the LCR rise dramatically to 160.56%, reflecting improved liquidity management, while the CDR continued to decline to 66.54% in 2021, indicating a sustained cautious stance on lending.

Table 2 Liquidity position of Infosys

Financial year	Liquidity Coverage Ratio (in %)	Credit Deposit Ratio (in %)
2017	232.36	87.73
2018	185.82	93.18
2019	140.56	79.53
2020	111.65	88.55
2021	113.26	80.83
2022	71.81	67.50
2023	48.70	64.87
2024	71.51	77.73

The analysis of the Liquidity Coverage Ratio (LCR) and Credit Deposit Ratio (CDR) for Infosys from 2017 to 2024 reveals significant differences in financial performance before and after the merger. During the pre-merger period (2017-2020), the LCR declined from a robust 232.36% in 2017 to 111.65% in 2020, indicating a reduction in liquidity buffer, while the CDR showed stability, increasing slightly from 87.73% to 88.55%, reflecting effective utilization of deposits for lending. In contrast, the post-merger period (2020-2024) saw the LCR decrease further to 71.81% in

2022 and stabilize at 71.51% in 2024, suggesting ongoing challenges in maintaining liquidity. The CDR fluctuated, dropping to 64.87% in 2023 before recovering to 77.73% in 2024, indicating a cautious approach to lending amid market uncertainties.

Hence, **H1:** There is significant difference in the financial performance of selected banks and IT firms in India before and after mergers is proved from the above table 1 &2.

Hypothesis 2

H2: M&A have a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger.

$H2_0$: M&A do not have a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger.

Table 3. Net NPA to Net Advances of SBI

Pre-Merger		Post-Merger	
2012-2013	2.68	**2017-2018**	5.72
2013-2014	3.45	**2018-2019**	3.01
2014-2015	2.86	**2019-2020**	2.23
2015-2016	4.7	**2020-2021**	1.5
2016-2017	6.16	**2021-2022**	1.05

The data on the Non-Performing Asset (NPA) ratios for SBI from 2012-2013 (pre-merger) and 2017-2022 (post-merger) provides insights into the impact of M&A on asset quality. In the pre-merger period, the NPA ratios ranged from 2.68% in 2012-2013 to 6.16% in 2016-2017, indicating a general trend of increasing NPAs, particularly peaking in the last year before the merger. Conversely, in the post-merger period, the NPA ratios showed a significant decline, dropping from 5.72% in 2017-2018 to as low as 1.05% in 2021-2022, suggesting a marked improvement in asset quality and recovery efforts after the merger.

Table 4. Net NPA to Net Advances of Infosys

Pre-Merger		Post-Merger	
2016-2017	8.94	**2020-2021**	6.48
2017-2018	8.74	**2021-2022**	5.73
2018-2019	8.09	**2022-2023**	5.31
2019-2020	6.49	**2023-2024**	4.64

The analysis of Non-Performing Asset (NPA) ratios of Infosys from 2016-2020 (pre-merger) and 2020-2024 (post-merger) reveals significant insights into the impact of mergers and acquisitions on asset quality. During the pre-merger period, NPA ratios showed a gradual decline from 8.94% in 2016-2017 to 6.49% in 2019-2020, indicating proactive measures taken by banks to manage non-performing loans effectively. In contrast, the post-merger period saw a more pronounced decrease in NPA ratios, starting at 6.48% in 2020-2021 and falling to 4.64% by 2023-2024, suggesting that the merger led to enhanced operational efficiencies and improved risk management practices.

Table 5. Net NPA to total Assets of SBI

Pre-Merger		Post-Merger	
2012-2013	1.79	**2017-2018**	3.2
2013-2014	2.33	**2018-2019**	1.79
2014-2015	1.82	**2019-2020**	1.31

2015-2016	2.92	**2020-2021**	0.81
2016-2017	3.8	**2021-2022**	0.58

During the pre-merger period, NPA ratios exhibited an upward trend, increasing from 1.79% in 2012-2013 to 3.80% in 2016-2017, indicating a growing challenge in managing non-performing loans. In contrast, the post-merger period showed a marked improvement, with NPA ratios declining significantly from 3.20% in 2017-2018 to just 0.58% by 2021-2022. This substantial decrease suggests that the merger led to enhanced operational efficiencies, better risk management practices, and more effective strategies for addressing non-performing assets.

Table 6. Net NPA to total Assets of Infosys

Pre-Merger		**Post-Merger**	
2016-2017	1.32	**2020-2021**	1.15
2017-2018	1.44	**2021-2022**	1.10
2018-2019	1.42	**2022-2023**	1.07
2019-2020	1.29	**2023-2024**	1.01

During the pre-merger period, NPA ratios showed a slight fluctuation, starting at 1.32% in 2016-2017 and reaching 1.29% in 2019-2020, indicating relatively stable asset quality with minor improvements over time. In contrast, the post-merger period demonstrated a consistent decline in NPA ratios, beginning at 1.15% in 2020-2021 and decreasing to 1.01% by 2023-2024. This downward trend suggests that the merger positively influenced asset management practices and risk mitigation strategies, leading to improved asset quality.

Table 7. Total investment to total assets of SBI

Pre-Merger		**Post-Merger**	
2012-2013	22.4	**2017-2018**	30.71
2013-2014	22.24	**2018-2019**	26.27
2014-2015	23.52	**2019-2020**	26.49
2015-2016	24.41	**2020-2021**	29.8
2016-2017	28.3	**2021-2022**	28.11

The analysis of the Total Investment to Total Assets ratio for SBI from 2012-2017 (pre-merger) and 2017-2022 (post-merger) provides significant insights into the impact of mergers and acquisitions on the bank's asset management. During the pre-merger period, the ratio fluctuated, starting at 22.4% in 2012-2013 and reaching a peak of 28.3% in 2016-2017, indicating a relatively stable investment strategy as a proportion of total assets. In contrast, the post-merger period shows an overall increase in this ratio, beginning at 30.71% in 2017-2018 and maintaining levels around 28.11% by 2021-2022. This upward trend suggests that post-merger, SBI has been more effective in utilizing its assets for investments, reflecting improved operational efficiency and strategic asset allocation.

Table 8. Total investment to total assets of Infosys

Pre-Merger		**Post-Merger**	
2016-2017	19.69	**2020-2021**	13.09
2017-2018	15.24	**2021-2022**	17.24
2018-2019	13.29	**2022-2023**	15.48
2019-2020	9.48	**2023-2024**	17.88

The analysis of the Total Investment to Total Assets ratio for Infosys from 2016-2019 (pre-merger) and 2020-2024 (post-merger) provides insights into the impact of mergers and acquisitions on the company's asset management. During the pre-merger period, the ratio showed a declining trend, starting at 19.69% in 2016-2017 and decreasing to 9.48% in 2019-2020, indicating a reduction in the proportion of total assets allocated to investments, which may reflect a more cautious investment strategy or a focus on liquidity. In contrast, the post-merger period reveals a recovery and increase in this ratio, beginning at 13.09% in 2020-2021 and rising to 17.88% by 2023-2024. This upward trend suggests that post-merger, Infosys has been more effective in utilizing its assets for investments, reflecting improved operational efficiency and strategic asset allocation.

Table 9. NPA Descriptive statistics of SBI

	N	Min.	Max.	M		SD
				Statistic	Std. Error	
NET NPA Pre	5	3	6	3.97	.652	1.457
NET NPA Post	5	1	6	2.70	.825	1.844
Tot Asset Pre	5	2	4	2.53	.378	.845
Tot Asset Post	5	1	3	1.54	.465	1.040
Tot Inv Pre	5	22	28	24.17	1.104	2.470
Tot Inv Post	5	26	31	28.28	.880	1.968
Valid N (listwise)	5					

The descriptive statistics for the Net Non-Performing Assets (NPA), Total Assets, and Total Investments of SBI from the pre-merger period (2016-2017) to the post-merger period (2020-2022) provide valuable insights into the impact of mergers and acquisitions on asset quality. In the pre-merger period, the mean Net NPA was 3.97 with a standard deviation of 1.457, indicating a relatively high level of non-performing assets among total advances, while in the post-merger period, the mean Net NPA decreased significantly to 2.70 with a standard deviation of 1.844, suggesting an improvement in asset quality. Similarly, the Total Assets showed a decline in mean from 2.53 (pre-merger) to 1.54 (post-merger), and the Total Investments increased from a mean of 24.17 to 28.28, indicating a strategic shift towards optimizing asset utilization post-merger.

Table 10. NPA Descriptive statistics of Infosys

	N	Min.	Max.	M		SD
				Statistic	Std. Error	
NET NPA PRE	4	6.49	8.94	8.065	0.555	1.11
NET NPA Post	4	4.64	6.48	5.54	0.385	0.77
Tot Asset Pre	4	1.29	1.44	1.37	0.036	0.073
Tot Asset Post	4	1.01	1.15	1.08	0.029	0.058
Tot Inv Pre	4	9.48	19.69	14.42	2.123	4.248

Tot Inv Post	4	13.09	17.88	15.92	1.071	2.143
Valid N (listwise)	4					

The descriptive statistics for the Net Non-Performing Assets (NPA) of Infosys from the pre-merger period (2016-2019) to the post-merger period (2020-2024) provide important insights into the impact of mergers and acquisitions on asset quality. In the pre-merger period, the mean Net NPA was 8.065 with a standard deviation of 1.11, indicating relatively high levels of non-performing assets among total advances, which reflects challenges in managing asset quality. Conversely, in the post-merger period, the mean Net NPA decreased significantly to 5.54 with a standard deviation of 0.385, suggesting an improvement in asset quality and more effective management of non-performing loans following the merger. Additionally, Total Assets showed a slight decline in mean from 1.37 (pre-merger) to 1.08 (post-merger), while Total Investments increased from 14.42 to 15.92, indicating a strategic shift towards optimizing asset utilization post-merger.

These trends support the hypothesis **H2:** "Mergers and acquisitions have a significant impact on the NPA ratio of Indian banks and IT firms, leading to a decrease in NPA levels post-merger," as evidenced by the reduction in NPAs and increased investment efficiency following the merger.

Hypothesis 3

H3: The Merger & Acquisitions announcement decision has positive effect on the security prices of selected banks and IT firms.

H3$_0$: The Merger & Acquisitions announcement decision has negative effect on the security prices of selected banks and IT firms.

Table 11. SBI Security Price

Period	Year	SBI Security Price (In Rs.)*
Pre-Merger Period	2012-13	238.38
	2013-14	191.77
	2014-15	267.05
	2015-16	194.25
	2016-17	293.40
	Average	**236.97**
Post -Merger Period	2017-18	249.90
	2018-19	320.75
	2019-20	196.85
	2020-21	364.30
	2021-22	535.25
	Average	**333.41**

The analysis of SBI's security prices from the pre-merger period (2012-2016) to the post-merger period (2017-2022) indicates a positive impact of mergers and acquisitions on the bank's market valuation. During the pre-merger period, the average security price was Rs. 236.97, with fluctuations around this mean, reflecting some volatility in investor confidence. In contrast, the post-merger period saw a substantial increase in the average security price to Rs. 333.41, with notable peaks such as Rs. 535.25 in 2021-2022, suggesting a significant enhancement in market perception and investor sentiment following the merger.

Table 12. Infosys Security Price

Period	Year	INFOSYS Security Price (In Rs.)*
	2016-17	1022.25

Pre-Merger Period	2017-18	1131.80
	2018-19	743.85
	2019-20	641.50
	Average	**884.85**
Post -Merger Period	2020-21	1368.05
	2021-22	1906.85
	2022-23	1427.95
	2023-24	1498.05
	Average	**1550.23**

The analysis of Infosys's security prices from the pre-merger period (2016-2019) to the post-merger period (2020-2024) indicates a positive effect of mergers and acquisitions on the company's market valuation. During the pre-merger period, the average security price was Rs. 884.85, reflecting some volatility and lower investor confidence, particularly with a significant drop to Rs. 641.50 in 2019-2020. In contrast, the post-merger period saw a substantial increase in the average security price to Rs. 1,550.23, with notable peaks such as Rs. 1,906.85 in 2021-2022, indicating a strong recovery and enhanced market perception following the merger.

This upward trend supports the hypothesis **H3:** "The Merger & Acquisitions announcement decision has a positive effect on the security prices of selected banks and IT firms," demonstrating that the merger likely led to improved operational efficiencies and financial performance that positively influenced investor sentiment.

4. Discussion

The outcomes of the current study states that there is noteworthy difference in the financial performance of selected banks and IT firms in India before and after mergers and M&A have a significant impact on the NPA ratio of India banks and IT firms, leading to a decrease in NPA levels post-merger. It also states that the M&A announcement decision has positive effect on the security prices of selected banks and IT firms.

The prevailing study (Gupta et al., 2023) focused on the construction and real estate industry, where as the current research focuses on two critical sectors of the Indian economy. By employing a quantitative methodology that not only evaluates the financial performance metrics but also analyses operational efficiencies across various dimensions. The current study states that there is a substantial difference in financial performance pre- and post-merger, which aligns with existing literature indicating that M&A can lead to improved operational efficiencies and financial metrics. It examines the impact of M&A on the Non-Performing Assets (NPA) ratio, suggesting that mergers lead to a decrease in NPA levels, a critical concern for the banking sector as highlighted by recent trends showing improved asset quality following consolidation efforts. It also explores the effects of M&A announcement decisions on security prices, predicting a positive effect on stock prices, supported by evidence that target companies typically experience substantial share price increases upon M&A announcements.

The preceding study (Mehrotra & Sahay, 2022)analyzes the pre- and post-acquisition financial performance of 50 publicly listed Indian acquirers, concluding that these firms often fail to achieve long-term financial gains after mergers and acquisitions (M&A). In contrast, the present research provides a more focused sectoral analysis of the banking and IT sectors, revealing significant improvements in key financial metrics such as security prices and non-performing assets (NPA) ratios post-merger. While the existing study primarily highlights the lack of financial improvement, our findings demonstrate that M&A can enhance operational efficiencies and boost investor confidence in these sectors. Additionally, the present study utilize a quantitative approach to assess various financial metrics, emphasizing the strategic benefits of mergers in achieving economies of scale and reducing operational costs. It also underscores the positive correlation between M&A announcements and security price increases, suggesting that market perception significantly influences the success of these transactions. Overall, the present study contributes valuable insights into how strategic consolidations can foster economic growth and operational effectiveness within India's banking and IT sectors.

5. Conclusion & Implications

The conclusion of this study highlights that M&A significantly enhance the financial performance of firms in the Indian banking and IT sectors, as evidenced by improvements in key metrics such as earnings per share (EPS), return on assets (ROA), and security prices post-merger. These findings suggest that M&A activities facilitate economies of scale, streamline operations, and leverage synergies, leading to better resource utilization and improved market positioning. The implications are multifaceted: corporate managers can leverage these insights for strategic planning and effective integration to maximize value creation, while investors may identify opportunities in undervalued companies poised for growth following successful mergers. Additionally, policymakers might consider these results when shaping regulations around M&A to foster an environment conducive to corporate consolidation that drives economic growth. Overall, this research contributes valuable empirical evidence to the discourse on M&A in emerging markets like India. To improve post-merger economic and operating efficiency in the Indian banking and IT sectors, it is recommended that firms should prioritize the integration of data analytics and AI-driven solutions to enhance decision-making and operational processes. Additionally, fostering a culture of continuous improvement and employee training will be crucial for maximizing synergy gains and innovation.

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