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A Study on Impact of Merger and Acquisition on Financial Performance of Agri-Food Companies

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ABSTRACT

The purpose of this study is to explore the expansion of merger and acquisition (M&A) literature in the context of Indian studies and examine the impact of mergers and acquisitions on various financial performance parameters of India's Agri-Food companies. The period of study is from 2011 to 2019, and Wilcoxon Sign Rank methodology has been used. The study hypothesized that there is significant growth in Indian literature of M&A and there is a significant difference in the operating performance, financial performance and shareholders' return of acquiring firms during the period of pre-M&A and post-M&A. The study findings state that the literature of M&A in India increases significantly, and the operating ratio, financial ratio, and shareholder return also exhibit a significant improvement whereas the expense ratio related to the operating ratio shows no improvement in performance. The study concludes that the India Agri-Food company's financial performance has improved overall for the acquiring firms during the post-M&A period.
Keywords: Mergers and Acquisitions (M&A); Financial Performance; Wilcoxon Sign Rank Test; Ratio Analysis

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INTRODUCTION

Mergers and acquisitions (M&A) as a form of inorganic growth are being used to restructure leading business companies worldwide. M&A has been racked up over the years, both in volume and value. In order to meet increasing domestic and global demand, Indian companies are aggressively expanding their capacity through mergers and acquisitions.

The Agri-Food sector in India contributes 16 percent of GDP and employs 49 percent of the population [1]. The industry has a substantial indirect impact on the rural economy's linked sectors, as well as a significant ripple effect on the manufacturing and service sectors of the national economy. In order to double farmers' incomes by 2022, the government is also asking for implementable proposals and solutions from diverse stakeholders [1]. The unprecedented growth in demand for food, need for scale and access to market distribution, branding and technology, will continue to drive more Mergers & Acquisitions in the sector.

Review of literature is the foundation stone of any research. This study reviews the existing literature rigorously, intending to take stock on which areas/sectors have already been examined. The literature review [2] attempts to define existing literature and discuss potential research avenues. A reexamination of the current state of the research is needed to advance any expanding discipline. This paper differentiates from the existing literature of M&A in the sense that it analyses the growing state of M&A literature in India as compared to international studies and secondly, examines the pre and post-merger financial performance. Thus, this study makes a modest attempt to enrich the literature in the Indian context.

The accounting measure (ratio analysis) has been used for the assessment of the performance of India's Agri-Food companies. Despite the substantial amount of literature on accounting measure performance still, the findings are inconclusive which refers to the fact that during the post-merger era, some sample firms exhibit significant improvement while the others show a decrease [3–6]. Some studies support the positive impact on financial performance [7–9] and others support the negative impact on financial performance [10, 11]. Thus, this research gap motivates the author to investigate the impact of M&A on Indian companies' financial performance using a set of ratios that examines the performance from the aspect of operating performance, financial performance, and shareholder return aspects.

The paper is subdivided into four sections. The literature review will be explained in section 2. In section 3, the study's objectives and hypothesis will be discussed. The data and research methodology used in the study will be discussed in section 4, and empirical evidence will be discussed in section 5. Conclusion, Implications for Managers, Limitations, and Future Scope of the study will be mentioned in Section 6.

LITERATURE REVIEW

Mergers and acquisitions are frequently utilized to restructure companies. Mergers and acquisitions are justified for several reasons, including achieving synergistic results [12, 13], gaining larger market control, and gaining access to creative capabilities, thus lowering the risks of developing a new service or product, increasing productivity using economies of scope and scale, and, in many circumstances, reshaping a company's competitive scope [14, 15]. A short-term solution to financial problems, reviving the business by bringing in new information to enhance long-term sustainability, and a short-term solution to financial challenges are some of the other reasons [16, 17].

According to the existing literature, academicians evaluated merger-related profits in two ways. First, using the event research method, scholars evaluatede the impact on stock returns of the target and acquiring firms during the announcement of a merger. Second, they examine the accounting data in the pre-M&A and post-M&A period by calculating various performance ratios and using advanced statistical techniques such as t-tests, correlations, regressions, and so on. *Table 1* shows a comprehensive evaluation of current merger performance studies that looked at the influence of M&A on firm performance in the pre and post-period.

The existing literature on M&A has shown mixed results. Although some studies found that mergers improved the profitability of the resulting firm [18, 28, 41–43] others found that mergers failed to produce positive returns. Acquisitions, likewise, tend to provide mixed results to the various stakeholders concerned. Although target company shareholders typically see positive short-term returns, acquiring company investors frequently witness share price underperformance in the months after the acquisition, resulting in small overall wealth increases for portfolio holders.

The pre and post-merger success of the merging firms dominates the M&A literature. These studies, despite their large number, are not definitive because the findings are contradictory. The M&A literature is not only full of contradictory findings, but the performance measures used in these studies also differ significantly. As a result, despite several studies, it is fair to conclude that this field of M&A operation remains a mystery, necessitating further study.

The problem addressed in this study is that existing literature on determinants of M&A performance is focused on several industries, various geographical areas, and uses different data selection methodologies. As a result, the existing literature's findings are inconsistent, and it is uncertain whether all of them are applicable to the Agri-Food sector. As a result, the study's goal is to contribute to knowledge on M&As by finding the impact on the performance of acquiring firms.

RESEARCH OBJECTIVES

The following are the objectives of this study:

a. To examine the existing literature to understand how mergers and acquisitions studies have occurred in the Indian and international markets.

b. To examine the impact of mergers and acquisitions on the operating performance, financial performance, and shareholders' wealth of the Agri-Food companies.

Hypothesis

i. H1: There is a significant growth in the literature of mergers and acquisitions studies in India.

ii. H2: There is a significant difference in operating performance of acquiring firms in the post-merger and acquisition period compared to the pre-merger and acquisition period.

Table 1

Review of Literature

S. No.	Author	Objective	Country	Findings
1	Healy et al., 1992 [18]	Post-merger performance of acquiring firms	US	Positive
2	Capron, 1999 [19]		European and the US	Positive
3	Rahman and Limmack (2004) [11]	Post-merger Operating cash flows of the acquired firm	Malaysia	Positive
4	Kumar and Rajib (2007) [7]	Post-merger Operating performance of firms post the merger	India	Positive
5	Kumar and Bansal (2008) [20]	To examine financial performance	India	Positive
6	Mantravadi and Reddy (2008) [21]	Operating Performance in different Industries	India	Positive
7	Sinha et al. (2010) [22]	Examines financial performance	India	Positive
8	Sukyee Lee, 2005 [23]	Improved market share and market power	Hong Kong	Positive
9	Alhenawi and Stilwell (2017) [24]	Create Value in the long run	USA	Positive
10	Zuhri et al. (2020) [25]	To examine the impact of M&A on Solvency and Profitability Ratio	Indonesia	Positive
11	Hajiyeva et al. (2020) [26]	Create Value for acquiring firm	BRICs nation	Positive
12	Dickerson et al. (1997) [27]	Improved Firm performance		Negative
13	Ghosh (2001) [28]	Pre- and post-acquisition operating cash flows		Negative
14	Langhe et al. (2001) [29]	Improved Firm performance		Negative
15	Sharma and Ho (2002) [30]	Improved Firm performance	Australia	Negative
16	Andre et al., (2004) [31]	To analyse the long-term performance	Canada	Negative
17	Pazarskis et al. (2006) [32]	Examine profitability performance		Negative
18	Singh and Mogla (2008) [33]	Examine profitability performance	India	Negative
19	Kuriakose, 2016 [34]	Impact on pre and post-performance	India	Negative
20	Yook (2004) [35]	Post-Acquisition Performance		Negative
21	Yeh and Hoshino (2002) [36]	Firms operating performance	Japan	Negative
22	Poddar (2019) [37]	Impact on Operating Efficiency of Acquiring firms	India	Negative
23	Mehrotra and Sahay, 2018 [38]	Review of Literature	All countries	Mixed-Positive and Negative
24	Aggarwal and Puja, 2019 [39]	Impact on the accounting-based performance	India	Mixed-Positive and Negative
25	Mantravadi (2020) [40]	To analyse the influence of M&A on operating performance in different Industries	India	Banking & Financial Services industry-Positive Pharmaceutical and Textiles Sectors – Negative

Source: compiled by the author.

iii. H3: There is a significant difference in acquiring firms' financial performance in the post-merger and acquisition period compared to the pre-merger and acquisition period.

iv. H4: There is a significant difference in shareholder wealth of acquiring firms in the post-merger and acquisition period compared to the pre-merger and acquisition period.

DATA AND RESEARCH METHODOLOGY

This study uses secondary data that has been extracted from the Scopus database and the CMIE Prowess IQ (Centre for Monitoring Indian Economy) database. For objective 1, the Scopus database has been used. Initially, the keywords namely, Mergers, Acquisitions, Firm Performance, Shareholder Performance and Value Creation were used to extract the number of studies without limiting the country from the year 2016 to 2020. Then, in the second phase the number of studies was extracted by limiting the country to India only. The past 5 years period has been used to get the recent data.

For the second objective, the data of merger and acquisition of Indian Agri-Food companies deals from the year 2014 to 2016 has been extracted. Then, the window of three pre- year and three post-year data of these deals have been collected, thus making the total period of data ~~the~~ year 2011 to 2019. To make the data compatible, various filters have been used. The year of event i.e., the year of merger and acquisition has not been taken into consideration for the study because the financial reporting in this year is different from the other years. The total number of Agri-Food company's data included in this study is 59.

Ratio analysis is a popular tool for comparing performance pre and post-mergers and acquisitions. To make statistical analysis of the data easier, IBM SPSS 25 is utilised to analyse the data. The Wilcoxon signed-rank test is a non-parametric statistical hypothesis test that is used to see if two related samples, matched samples, or repeated measurements on a single sample different population have means ranks (i.e., a paired difference test). The Wilcoxon signed-rank test is a non-parametric test used to see if two dependent samples were drawn from the same population having the normal distribution. The level of significance used in this study is 5 percent. The author believes that it will be beneficial for the reader to gain more understanding about mergers and acquisitions by conducting this research.

Table 2 summarizes the formula used for the calculation of ratios.

EMPIRICAL EVIDENCE

Objective 1 states that the number of M&A studies has been increased in India. The results are explained in this section. The number of studies country-wise and the number of studies in India has been graphically presented from 2016 to 2020 (*Fig. 1*).

The United States has conducted the highest number of studies, i.e., 209, followed by the United Kingdom, which had 108 studies. India ranks 4th in the number of studies conducted from the year 2016 to 2020. The number of studies conducted in India is around 60, which is much lower than the highest two countries' studies. At the same instance, the number of studies is almost near to other countries' studies. It can be inferred that Mergers and Acquisitions in India are growing equivalently to other developed nations. The number of studies will match the United States and United Kingdom studies in the coming years.

From the above *Fig. 2*, it can be concluded that Indian studies are growing gradually in the last five years. Moreover, the number of studies decreased in 2020 as compared to 2019. The reason is that the Indian economy has been hit by COVID-19, which resulted in a complete lockdown of the whole country for three continuous months beginning from March 24, 2020, and the lockdown was first lifted on June 1, 2020. This situation is too abnormal for the whole world as no one has ever witnessed this type of pandemic, which has led to a decrease in the number of publications due to the lockdown of academic and company areas. Thus, this is the reason for a decrease in the number of studies of 2020 in India.

Hence, hypothesis 1 is accepted, which states that there is significant growth in the literature of M&A in India.

Based on operating performance, financial performance, and shareholder wealth, this paper aimed to evaluate acquiring firms' performance during the post-M&A and pre-M&A periods. The hypothesis of the study is that acquiring firm's performance has improved in the post-M&A period compared to the pre-M&A period.

Table 3 shows that the operating performance ratio, namely, the operating profit ratio and operating expense ratio, indicates that acquiring enterprises' operating performance increases significantly in the post-M&A period. The operating profit ratio in the post-M&A period has increased from 21.1 to 26.2. This increase implies a boost in performance after the consolidation of acquiring and target firms. The mean ratio of operating profit ratio in each period is positive, and the mean change is also positive. The ratio is statistically significant at a significance level of 5%, indicating that profit margins increase due to consolidation in the post-M&A period. The

Table 2

Measure of Ratio Used in the Study

Measure	Ratio	Formulas
Operating Performance	Operating Profit Margin (OPM), (%)	= EBIT/Net Sales
	Operating Expense Ratio (OER), (%)	= Total operating expenses-depreciation / Gross Revenue
Financial Performance	Gross Profit Margin (GPM), (%)	= Profit before Interest and Tax / Net Sales
	Return on Assets (ROA), (%)	= Profit before Interest and Tax / Total Assets
	Net Profit Margin (NPM), (%)	= Profit After Tax / Net Sales
	Return on Equity (ROE), (%)	= Profit After Tax / shareholders' equity
Shareholders Return	EPS (Rs)	= Net Profit / No. of equity shares
	Book Value per share (Rs)	= Value of equity (Equity Shareholders-Preference shareholders) / Average outstanding shares
	Dividend Yield, (%)	= Annual Dividend per share / Current share price

Source: [3, 5, 21, 44–46].

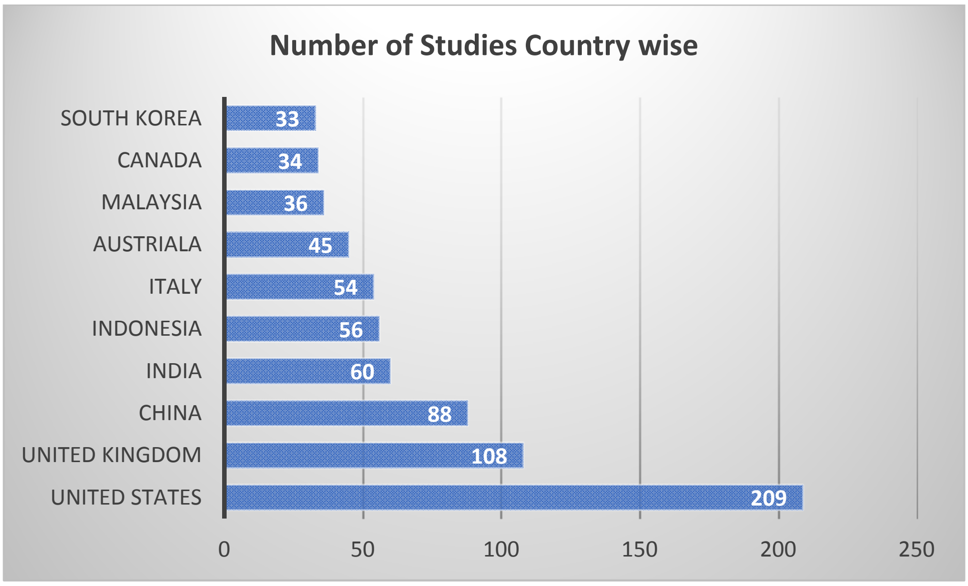

Fig. 1. **Number of Studies Country-Wise (2016–2020)**

Source: compiled by the author.

operating expense ratio has reduced in the post-M&A period from 21.2 to 19.0. The results infer that the mean ratio is positive in each period still, the mean change is negative, which indicates that expenses of acquiring firms have decreased in the post-M&A period. The t-value is not much statistically significant. Hence, hypothesis 1 is accepted.

The indicators of financial performance ratios, Return on Assets, Gross Profit Margin and Net Profit Margin, conclude that during the post-merger period, the financial performance of the acquiring firm differs significantly. The Gross Profit Margin ratio has decreased from 17.7 to 13.6 in the post-M&A period. The mean change is negative, and p-value indicates that the results are not statistically significant. The decrease indicates that Gross Profit Margin has no improvement during the post-M&A period. The Net Profit Margin increases from 15.4 to 21.5 in the post-M&A period and means change is also positive, indicating that the acquiring firm net profit margin has increased due to the consolidation of firms. The p-value shows that the results are statistically significant.

The Return on Assets and Return on Equity have also shown significant improvement in the

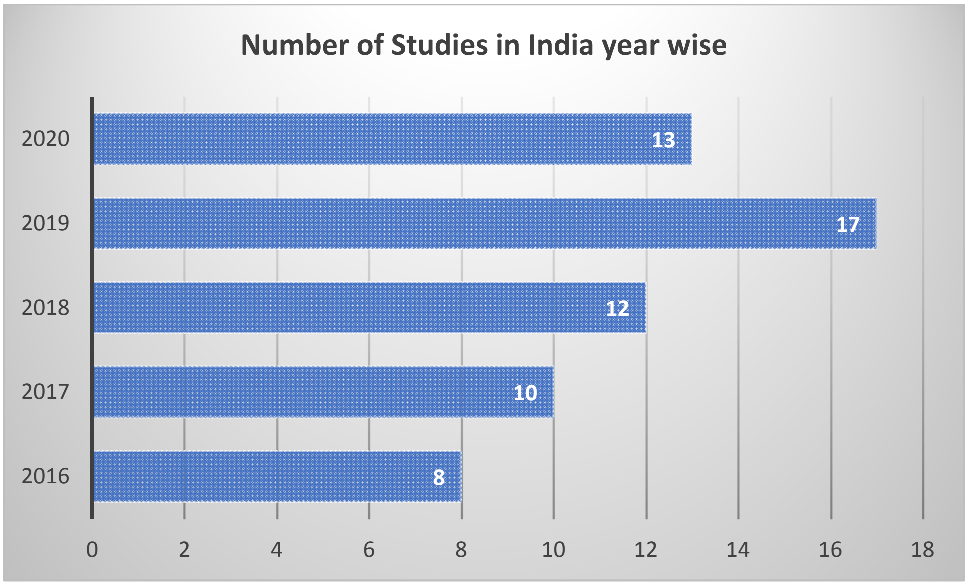

Fig. 2. **Number of Indian Studies Year-Wise (2016–2020)**

Source: compiled by the author.

Table 3

Results of Ratio Analysis

Ratios	Post Mean Ratio (–3, +3)	Pre-Mean Ratio (–3, +3)	Mean Change (–3, +3)	t-value	Significance
OPM	26.2	21.1	4.1	2.73**	0.046
OER	19.0	21.2	–2.2	2.05	0.001
GPM	13.6	17.7	–4.1	3.56	0.310
NPM	21.5	15.4	6.1	2.41**	0.011
ROA	21.6	16.4	5.2	5.16**	0.021
ROE	16.4	13.9	2.5	0.64**	0.016
EPS	20.4	17.1	3.3	1.09**	0.032
BV per share	19.2	15.8	3.4	5.10**	0.040
Dividend Yield	13	14.1	–1.1	1.05	0.229

Source: compiled by the author.

Note: ** significance at 5%.

post-M&A period and the p-value indicates that results are statistically significant. The mean ratio in pre-period and post-period is positive, and the mean change is also positive. Thus, hypothesis 2 has been accepted.

The shareholder's return measured by Earnings per share, Book Value per share and Dividend Yield has been used. The EPS has increased from 17.1 to 20.4, indicating that the mean ratio is positive in each period. The difference in the pre mean ratio and post mean ratio is positive and the p-value is statistically significant. The Book Value per share indicates that in the post-M&A period there is a positive increase in the mean value of 3.4 and the p-value indicates a statistically significant value. Whereas the Dividend Yield does not increase in the post-M&A and the p-value is statistically insignificant. Thus, it can be inferred that hypothesis 3 has been accepted.

In a nutshell, it can be inferred that there is an overall significant improvement in the performance of Indian Agri-Food companies. The merger is accountable for the improved performance. The merged firms seem to have generated higher operating, financial and shareholders profit because of improved managerial efficiency, utilization of assets effectively and increase in return per share received by shareholders. As a result of the shift of Indian companies from non-competitive to operationally more viable firms, synergistic gains appear to have accrued to the acquired firm. To summarize, this study reaffirms or renews faith in the Indian management community's ability to use mergers and acquisitions as effective instruments of corporate growth strategy.

CONCLUSION

Mergers and acquisitions are among the most popular tactics used by businesses to achieve synergies, tax savings, and consolidation [47–49]. Furthermore, [15] have argued that M&As are also driven by economies of scale, economies of reach, higher growth paths, low concentrated industries, and higher cash flows. As a result, it is apparent that mergers and acquisitions are intended to build and offer superior value to shareholders and improve the performance of acquiring firms during the period of post-M&A.

This study examines the growth rate of M&A literature in India and analyzes the performance of acquiring firms in the post-M&A period. The paired t-test methodology has been used in the study for making a comparison between the pre-M&A period and the post-M&A period. The data from the period 2011 to 2019 has been taken into consideration by Indian companies. The three-year pre- and three-year post windows have been calculated to analyze the long-term performance. The performance has been on three aspects — Operating performance, financial performance, and shareholder return. The various accounting ratio related to these measures have been analyzed namely, Operating Profit Margin, Operating Expense Ratio, Gross Profit Margin, Net Profit Margin, Return on Assets, Return on Equity, EPS, Book Value per share and Dividend Yield.

The findings of these ratios conclude that operating performance, financial performance, and shareholder return exhibit a significant improvement in India's Agri-Food companies' performance. All three hypotheses of the study have been accepted. Mergers and acquisitions are aimed at developing and generating synergistic value [50]. Most academics consider the increase in profit margin, as well as changes in operating and financial ratios, to be crucial markers of post-merger value that have contributed to synergy. The post-merger shareholder earnings also improve in the post-merger because most government policies favour the food and agriculture industries because of their significant contribution to economic growth; for example, in terms of GDP. The results are in line with studies of other Indian industries both in case of domestic and international [8, 18, 20, 28, 39, 51–55]. It can be inferred that M&A produces results in the long term. The acquiring company pays a high premium, operational integration takes time to complete and cultural integration is another mammoth task. Synergies might not emerge quickly because of all these causes. M&A can be defined as a long-term investment that yields favourable returns and enhances a company's accounting and financial position.

This study has several managerial implications. The managers should pursue mergers and acquisitions that create a win-win outcome for both acquiring and target companies. Mergers and acquisitions by themselves are insufficient to develop strong, efficient, and competitive systems because a variety of other factors influences performance. They must be reinforced by additional measures, such as improving employee knowledge and professionalism, and ensuring consistency between the two companies in the merger or acquisition implementation strategy, bringing about more effective corporate governance measures to further elevate the institutions' competitiveness in the context of the problems of a globalized and liberalized environment. Secondly, the acquiring firm should identify the target's hidden problems and contingent liabilities and not ignore them due to infatuation with the other party.

The limitation of this study is that only publicly traded companies that completed a merger or acquisition in the India Agri companies during the research period have been included. Only those companies with three years pre and 3 years post-financial data are included. Furthermore, aside from firm and deal variables, other micro-and macroeconomic variables viz.

GDP rate, government policies, taxation rules and regulations, and exchange rate can also affect the acquiring firm's accounting output in the long run. The impact of Mergers and Acquisitions from the cross-border and stock price reaction leaves a future scope for the extension of the study.

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