

**EMPIRICAL EVIDENCES OF MERGER, ACQUISITIONS AND  
ECONOMIC EFFICIENCY IN INDIA- AN ANALYSIS ACROSS  
SECTORAL SELECTED INDUSTRIES**

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**ABSTRACT**

*Merger & Acquisitions (viz-corporate restructuring) plays a pivotal role in improvising financial, social and economic environment across the globe. Corporate restructuring is resorted to by numerous MNC's (multinational companies) all over the world due to globalization and cut throat competition in the market. Predominant strategic goals due to scarcity of time can be successfully accomplished with the aid of Merger and Acquisitions with a relatively secure and stable outcome. Significant sectors such as Banking, Finance, Pharmaceuticals, Manufacturing, Telecommunication and Information Technology Sectors etc have adopted merger and acquisitions (M&A) for business expansion and overcoming global challenges .So, it is very necessary to analyze that whether the firm opting for (M&A) have succeeded in improving financial performance and shareholder value. The current study aims analyzing whether there is significant and predominant trends and progress of merger and acquisitions on the Indian sectoral industries or not. The study is based on secondary data which was collected from capital market database called centre for monitoring Indian economy pvt ltd (Prowess, CMIE) various websites, journals and Capitaline database. The period under study is 7 years ranging from financial assessment year 2015-16 to 2021-22.Trend and Ratio Analysis has been used as a tool for computation of operating financial performance of the sample companies from the selected sample sectors under present study. The results of the overall analysis depicts that there is a significant trends and progress of MER AND ACQ on the Indian business.*

**KEYWORDS:** *Merger & Acquisitions (M&A), Economic Efficiency, Financial Performance, Trend Analysis, Ratio Analysis.*

## 1. INTRODUCTION

The new-age business ecosystem (**Paulus-Rohmer et al., 2016; Rong et al., 2018**) is a complex and dynamic entity that fosters continuous innovation in a hyper-competitive world. Merger and Acquisitions (**M and A**) in India have evolved through a distinct phase of regulations.

The main reason for the necessity of M And A in today's economy is that it permits business to accomplish financial prudence of scales unifying with or obtaining another company could end in savings of cost and working efficacies which will not be probable for either business alone. Recently, the M and A has increased vastly in India then several growing strategy forms can be simply understood through several economic fronts. Moreover, there are many purposes for various M and A types witnessed in the corporate world. This research is an effort taken to deliver eye view of the bird for the M and a concept from the regulatory and industry perspective and different types of motives after M and A.

## 2. Review of Related Literature

The review of literature is concerned with the comprehensive summary of previous research activities. Investigators have studied on various sectors of mergers and acquisitions (**M&A**). Investigators have studied on various sectors of Mergers and Acquisitions (**M&A**). For more than thirty years, acquisitions have been a subject of tremendous study potential for all practicing educators as well as managers. A detailed assessment of the literature has been conducted in the current study among which some reviews are outlined here in brief from the sample sectors in India.

**a.** The purpose of this study was to find out how India's **Manufacturing Sector** firms' financial performance was affected by M&As. This study used a sample of 47 firms that merged between the year 2014 and 2015. These firms came under different manufacturing industries in India. BSE, financial statements of the firms and CMIE database were utilized for collecting data and tested with a non-parametric test called, Wilcoxon Signed Rank Test. The time period covered by this study was 2011-14 for before M&A process and 2015-18 for after M&A process. The paper's conclusion stated that it gave a perspective on the M&A process done in the manufacturing firms of India. (**Khatter & Yadav, 2022**)

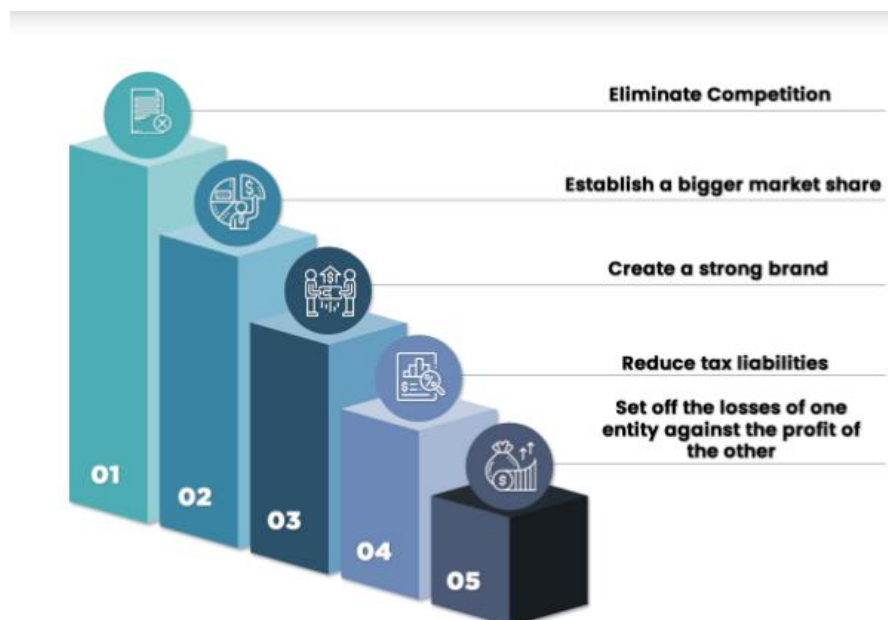
**b.** Similarly, the **M&A** strategies are followed in the **IT Companies** in India. In this perspective **Bhasin, Kar and Soni (2022)** offered the inferences of paradigm shift towards the merger and acquisitions strategies specifically in IT corporate in Indian context, using motive analysis from the year 2000 to 2015. In this Indian context, the research enunciated the patterns and trends of motives of (CBMA) of domestic M&A and cross-border M&A (CBMA), by Indian IT corporates and particularly seeks out in investigating the main CBMA motives. One such study, explored the empirical evidence, recommends the marked variations and corresponding dynamism in patters of motives for CBMA over the various sub-time periods.

**c.** The focus of this study was to examine the influence of M&As on various industrial sectors of India namely, **Pharmaceuticals, Banking and Telecommunications**. The aim of this study also focused on the type of M&As', namely domestic or cross-border, influence on the acquiring companies' performance. This study's findings stated that the influence of M&A differed between domestic as well as cross-border M&As, as indicated by the financial performance of acquiring firms. (**Sethi, 2021**)

d. The financial sector performance plays a significant role in economy development. But also the **Banking Industry's** performances in India over different time period were characterized by great regime of insolvency, crucial distress incidence, vulnerability towards macro-economic instability and systemic financial-crisis. By using, criterion of (CAMEL) Capital, Asset, Management, Earnings and Liquidity, researcher made utilise of secondary data, gained from accounts statements and annual reports of banks. The study to assess this objective, covered the time period of ten years from 2008 to 2018, research assessed bank's performance before merger and acquisition announcement and after this announcement as well through paired sample-test. The outcomes, deliberated that Merger and acquisition explored positive results, with significant impacts on private commercial bank's performance measures in comparison to public-banks (**R. Agarwal, Vichore, & Gupta, 2019**).

e. Further in era of new Companies Act, one of important mergers consummated, is the merger in **Telecommunication Sector** (viz Vodafone India Ltd and Idea Cellular Ltd) that led to form the new Vodafone Idea Ltd entity. This research proceeded with an analysis on the share price and financial performance of merger companies to assess the effectiveness of merger announcement. The study reveals that this M&A did not provide any positive outcome regarding the financial performance and share price. The study also states that the probable reason for this kind of outcome was due to high competition and the short time span selected by the study. (**Chatterjee & Dandapat, 2020**)

f. This paper focused on examining the influence of M&A on the **Pharmaceutical Companies'** financial performance, in India. This study made its foundation based on the fact that a firm's profitability is dependent on the firm's efforts for selling, imports and exports, and size; but not on the firm's product demand and market share. The results of this study stated that firms' profitability did not have any important influence. This was because of the resulting X-inefficiency and the emergence of new companies into the space of market. (**Mishra & Chandra, 2010**)



**Significance of M&A in India (Corpbiz, 2023) (Fig 1)**

### **3. Performance Measures and (M and A) In Indian Context**

The pace of merger and acquisition phenomena in Indian context picked out in response towards different economic reforms, been introduced by Indian government after 1991, in pushing for globalization and economic liberalisation. The Indian-economy had undergone a primary transformation and unique structural change, preceding the economic reforms. **In this business and liberalised economic environment, Competence and size had turned out as the focus of each Indian business enterprise, since the firms realised the necessity in growing and expanding business, such that they have better understanding to tackle the firm's competition.** Mergers and Acquisition evolved as one of major efficient approaches of restructuring of corporate firms, and hence thereby to become the integral part of long-term business-strategy in Indian Corporates.

### **4. Why Need Multiple Sectoral Studies?**

The present study would go to investigate the detail of mergers and acquisitions (M & A) with greater focus and aim in accordance with detailed sector like-Manufacturing, Information Technology, Banking And Finance, Telecommunications And Pharmaceutical Sectors and their respective pre and post acquisitions and mergers taking various sample companies from each sectors and analysing them with aid of various statistical tools and techniques and methodology for a period of 7 years.

### **5. Research Methodology**

#### **a. DATA COLLECTION**

The study has intended to collect data specific to the selected **25 companies** those have gone through M&A in India. The data of last **7 years** have been accessed. The data related to **profitability ratio, liquidity ratio, leverage and activity ratio** have been collected. The study has planned to analyze the quantitative data in **IBM SPSS and Excel software..** Based on the result, the study will provide further suggestions and recommendations for future enhancement. The data is collected from reliable and standard databases such as **Centre for Monitoring Indian Economy (CMIE) and Registrar of Companies (RoC)**. The company's balance sheets also are referred from Ministry of Corporate Affairs (MCA), Bombay Stock Exchange (BSE), And National Stock Exchange (NSE) and Company Annual Reports.

#### **b. DATA METHODOLOGY**

**Ratio Analysis Technique** calculates the economic strength of the organisation in terms of liquidity, operational efficacy, and profitability place. It is ended through the association of data available in the economic statements. It is an effectual method used for evaluation of economic performance of the various industries **viz (Manufacturing, Telecommunication, Information Technology, Banking and Finance, Pharmaceuticals)**. **Trend Analysis** examination is a technique applied in practical analysis with intention to forecast future stock price movements based on currently attained trend data. This analysis utilizes historical data to test. Entirely, 9 ratios casing diverse sorts like liquidity, leverage, profitability and operational efficacy have been assessed for ascertainment of economic presentation.

#### **c. RESEARCH QUESTION**

Is there any significant trends and progress of MERGER AND ACQUISITIONS in the Indian business firms?

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**d. COMPANY PROFILE PARAMETERS AND DEMOGRAPHIC DETAILS**

**(Table 1) Pre-Merger and Acquisition**

Descriptive Statistics						
SAMPLECOMPANIES	N	R	Minimum (Min)	Maximum (Max)	M	SD
<b>Indus Towers &amp; Bharti Infratel</b>	8	3248	0	3248	455.33	1133.057
<b>Indiabulls Housing Finance Limited (IBHFL) And India Bulls &amp; Lakshmi Vilas Bank Limited (LVB)</b>	8	10000	0	10000	1281.26	3523.038
<b>Bank Of Baroda &amp; Vijaya Bank And Dena Bank</b>	8	46168	0	46168	5839.04	16295.579
<b>Indusind Bank &amp; Bharat Financial (SKS Microfinance)</b>	8	16000	0	16000	2214.65	5597.598
<b>Nbfc Capital First &amp; Idfc Bank</b>	8	5000	0	5000	711.63	1744.745
<b>Vodafone India &amp; Idea Cellular</b>	8	105870	0	105870	13249.92	37424.181
<b>TATA Steel &amp;ThyssenKrupp</b>	8	77000	0	77000	9644.14	27215.898
<b>State Bank Of India &amp; Bhartiya Mahila Bank</b>	8	22000	0	22000	2788.82	7763.170
<b>Flipkart &amp; E-Bay India</b>	8	30000	0	30000	3802.38	10585.968
<b>Infosys &amp; Kaleidoscope Innovation</b>	8	29287	0	29287	3729.95	10328.344
<b>Reliance Retail &amp; Future Group's Retail Business</b>	8	18000	0	18000	2329.73	6332.650
<b>Ola &amp; Etergo</b>	8	1500	0	1500	207.87	523.131
<b>Itc &amp; Sunrise Foods</b>	8	36500	0	36500	4619.19	12882.061
<b>Zomato &amp; Uber Eats</b>	8	40000	0	40000	5106.42	14100.250
<b>LIC &amp; IDBI Bank</b>	6	109999	1	110000	18508.83	44822.903
<b>Walmart &amp; Flipkart</b>	8	2300000	0	2300000	287517.74	813165.630
<b>Bharti Airtel &amp; Tikona</b>	8	66000	0	66000	8301.71	23313.827
<b>Wipro Ltd&amp; Info Server S.A.</b>	8	150000	0	150000	18796.27	53014.379
<b>Ebix &amp;Yatra</b>	8	10430	1	10431	1329.07	3677.887

<b>Havells India &amp; Lloyd Electric's Consumer Durable Business</b>	8	5847	0	5847	812.80	2043.420
<b>Dr. Reddy Laboratories Ltd &amp; Imperial Credit Private Ltd</b>	8	22175	0	22175	2776.02	7838.375
<b>Taro Pharma &amp; Canada's Thallion Pharmaceuticals</b>	8	1407	0	1407	185.85	494.178
<b>Bandhan Bank &amp; Gruh Finance</b>	8	66000	0	66000	8291.93	23317.829
<b>Apple &amp; Intel's Smartphone Modem</b>	8	132000	0	132000	16520.05	46660.963
<b>Tata Steel &amp; Bhushan Steel</b>	8	77000	0	77000	9656.51	27210.905
<b>Valid N (Listwise)</b>	<b>6</b>					

**(Source-Authors Compilation)**

From the tables above, it is observed that there are 6 and 9 count of observations inside the data group for pre-merger and acquisition. The data set value, calculated through totalling all the records and isolating through the sum of figures are considered to be normal. The value of mean in the data set splits the greater values from the minor values. The value of standard deviation should be above 0.5 and all the variables of our study matched the exposed range.

**(Table 2) Post-Merger and acquisition**

<b>Descriptive Statistics</b>					
<b>SAMPLE COMPANIES</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
<b>Indus Towers &amp; Bharti Infratel</b>	9	0	3500	642.88	1260.997
<b>Indiabulls Housing Finance Limited (IBHFL) And Indiabulls &amp; Lakshmi Vilas Bank Limited (LVB)</b>	9	0	26000	3019.16	8626.103
<b>Indusind Bank &amp; Bharat Financial (SKS Microfinance)</b>	9	0	17000	2337.93	5568.620
<b>NBFC Capital First &amp; Idfc Bank</b>	9	0	10000	1283.48	3281.439
<b>Vodafone India &amp; Idea Cellular</b>	9	0	9226	1032.57	3072.615
<b>TATA Steel &amp; ThyssenKrupp</b>	9	0	80500	9517.27	26667.757
<b>State Bank Of India &amp; Bhartiya Mahila Bank</b>	9	0	245652	27859.53	81683.945



<b>Flipkart &amp; E-Bay India</b>	9	0	22000	2472.08	7323.385
<b>Infosys &amp; Kaleidoscope Innovation</b>	9	0	336294	38465.99	111717.451
<b>Reliance Retail &amp; Future Group's Retail Business</b>	9	0	245581	28310.25	81504.023
<b>Ola &amp; Etergo</b>	9	0	3000	335.23	999.292
<b>ITC &amp; Sunrise Foods</b>	9	0	49824	6261.93	16454.535
<b>Zomato &amp; Uber Eats</b>	9	0	67900	7562.60	22626.581
<b>LIC &amp; IDBI Bank</b>	9	0	95700	11344.35	31680.531
<b>Walmart &amp; Flipkart</b>	9	1	2200000	245571.20	732918.233
<b>Bharti Airtel &amp; Tikona</b>	9	0	67774	7827.45	22486.781
<b>Wipro Ltd &amp; Info Server S.A.</b>	9	0	201000	22748.90	66849.883
<b>Ebix &amp; Yatra</b>	9	0	11000	1247.57	3657.524
<b>Havells India &amp; Lloyd Electric's Consumer Durable Business</b>	9	0	6500	938.32	2141.475
<b>Dr. Reddy Laboratories Ltd &amp; Imperial Credit Private Ltd</b>	9	0	22739	3345.43	7552.126
<b>Taro Pharma &amp; Canada's Thallion Pharmaceuticals</b>	9	0	1550	368.37	654.873
<b>Bandhan Bank &amp; Gruh Finance</b>	9	0	75000	8831.81	24851.207
<b>Apple &amp; Intel's Smartphone Modem</b>	9	0	137000	15245.85	45657.840
<b>Tata Steel &amp; Bhushan Steel</b>	9	0	80500	9511.15	26670.184
<b>Valid N (List Wise)</b>	<b>9</b>				

(Source-Authors Compilation)

From the tables above, it is observed that there are 6 and 9 count of observations inside the data group for post-merger and acquisition. The data set value, calculated through totalling all the records and isolating through the sum of figures are considered to be normal. The value of mean in the data set splits the greater values from the minor values. The value of standard deviation should be above 0.5 and all the variables of our study matched the exposed range.

### 6. Analysis of Sample Data (Is there any significant trends and progress of MERGER AND ACQUISITIONS in the Indian business firms?)

MER&ACQ is a significant module for the development of large corporations across the globe. This has increase in every sector due to increasing competition in the business atmosphere, free drive of capital in nations' globalization and liberalization of frugality. MER&ACQ accelerate an organization growth particularly in a phase where companies are slow because of inadequate resources. This widely helps in diversification of risk of a firm.

In past few years, the Indian business environments have seen a significant rise in MER&ACQ activities across different sectors. There are some key trends and progress in MER&ACQ in Indian business including strategic acquisition, in which Indian companies are increasingly involving to expand their market presence, gain a competitive edge and diversify their service and product in the market. Particular sectors such as e-commerce, renewable energy, healthcare and technology have seen a rise in MER&ACQ activities because of technology advancement, regulatory changes and customer preference. Private equity firm are significant MER&ACQ activities through offering capital for acquisition and support companies in growth strategies.

## 7. HYPOTHESIS

**H<sub>1</sub>:** There is significant trends and progress of MERGER AND ACQ UISITIONS in the Indian business firms?

**H<sub>0</sub>:** There is no significant trends and progress of MERGER AND ACQ UISITIONS in the Indian business firms?

### Trend Analysis

Trend examination is a technique applied in practical analysis with intention to forecast future stock price movements based on currently attained trend data. This analysis utilizes historical data to test.

### General Linear Model

#### PRE-MER&ACQ

TIME	Dep Variable
1	OPERATING PROFIT PRE
2	CURRENT RATIO PRE
3	ASSET TURNOVER RATIO PRE
4	CASH EARNINGS RETENTION RATIO PRE
5	NET PROFIT PRE

Source: Author's Own creation

	M	SD	N
OPERATING PROFIT(PRE)	1.01	3.985	25
CURRENT RATIO(PRE)	1.14	.894	25
ASSET TURNOVER RATIO(PRE)	30.51	42.133	25
CASH EARNINGS RETENTION RATIO(PRE)	55.50	42.586	25
NET PROFIT(PRE)	24.60	31.303	25

Source: Author's Own creation



<b>Table 5 Multivariate Tests</b>							
Effect		Val	F	Hypo df	Err df	S.	Partial Eta Sq.
TIME	Pillai's Trace	.684	10.835 <sup>b</sup>	4	20	.000	.684
	Wilks' Lambda	.316	10.835 <sup>b</sup>	4	20	.000	.684
	Hotelling's Trace	2.167	10.835 <sup>b</sup>	4	20	.000	.684
	Roy's Largest Root	2.167	10.835 <sup>b</sup>	4	20	.000	.684

Source: Author's Own creation

If multivariate check is significant ( $p < 0.05$ ), it specifies that there is a statistically substantial variance between groups for at least 1 of all the dependent variables. In the above table, all significant values are below the range of 0.05. Hence, the dependent variable proved the determination of specific variables driving the complete multivariate outcome.

<b>Table 6 Mauchly's Sphericity<sup>a</sup> Test</b>								
Measure: MEASURE_1								
Within Subjects Effect	Mauchly's W	App. Sq.	Chi-Sq.	df	S	Epsilon <sup>b</sup>		
						Greenhouse-Geisser	Huynh-Feldt	LB
TIME	.014	90.802	9		.000	.635	.720	.250

Source: Author's Own creation

Mauchly's Sphericity Test is stated as portion of the productivity when leading a recurrent measure in ANOVA. The assessment produces a p-value that designates whether the supposition of Sphericity has been disrupted. If the value of p related with Mauchly's Test is fewer than the selected level of alpha ( $< 0.05$ ), then the supposition of Sphericity has been disrupted. If Sphericity is disrupted, changes like the Greenhouse-Geisser, Huynh-Feldt corrections could be used to precise the violation and confirm the results' validity. But for the present hypothesis p values are below 0.05 which represents that Sphericity is not violated and rate of yield is high.

Source		Type 3 Sqs	df	M2	F	S.	Partial Eta Sq.
TIME	Sphericity Assumed	49829.191	4	12457.298	15.273	.000	.399
	Greenhouse-Geisser	49829.191	2.538	19630.560	15.273	.000	.399
	Huynh-Feldt	49829.191	2.880	17304.506	15.273	.000	.399
	Lower-bound	49829.191	1.000	49829.191	15.273	.001	.399
Error(TIME)	Sphericity Assumed	75037.066	92	815.620			
	Greenhouse-Geisser	75037.066	58.382	1285.277			
	Huynh-Feldt	75037.066	66.230	1132.983			
	Lower-bound	75037.066	23.000	3262.481			

Source: Author's Own creation

Source	TIME	Type 3 Sqs	df	M2	F	S.	Partial Eta Sq.
TIME	Linear	24756.132	1	24756.132	38.287	.000	.625
	Quadratic	7568.592	1	7568.592	12.850	.002	.358
	Cubic	17394.754	1	17394.754	24.792	.000	.519
	Order 4	109.713	1	109.713	.083	.006	.004
Error(TIME)	Linear	14871.674	23	646.595			
	Quadratic	13546.703	23	588.987			
	Cubic	16137.299	23	701.622			
	Order 4	30481.390	23	1325.278			

Source: Author's Own creation

Source	Type 3 Sqs	df	M2	F	S.	Partial Eta Sq
Intercept	61032.852	1	61032.852	46.140	.000	.667
Err	30423.678	23	1322.769			

Source: Author's Own creation

**Estimated Means of Marginal**

<b>Table 10 Estimates</b>				
TIME	M	Std. Err	95% Confidence Interval	
			Lower Bound(LB)	Upper Bound(UB)
1	1.005	.813	-.677	2.688
2	1.137	.183	.760	1.515
3	30.511	8.600	12.720	48.302
4	55.504	8.693	37.521	73.486
5	24.604	6.390	11.386	37.822

Source: Author's Own creation

**Table11 Pairwise Comparisons**

(I) TIME	(J) TIME	M Diff (I-J)	Std. Err	S. <sup>b</sup>	95% Confidence Interval for Difference <sup>s</sup>	
					LB	UB
1	2	.132	.877	.000	2.853	2.589
	3	29.506	8.555	.002	56.059	2.952
	4	54.498	8.943	.000	82.257	26.740
	5	23.598	6.062	.005	42.414	4.782
2	1	.132	.877	.000	2.589	2.853
	3	29.374	8.598	.002	56.063	2.685
	4	54.366	8.695	.000	81.356	27.377
	5	23.466	6.377	.002	43.260	-3.672
3	1	29.506	8.555	.002	2.952	56.059
	2	29.374	8.598	.004	2.685	56.063
	4	24.992	11.718	.003	61.364	11.379
	5	5.908	8.065	.000	19.126	30.941
4	1	54.498	8.943	.000	26.740	82.257
	2	54.366	8.695	.000	27.377	81.356
	3	24.992	11.718	.003	11.379	61.364
	5	30.900	9.821	.004	.414	61.386
5	1	23.598	6.062	.000	4.782	42.414
	2	23.466	6.377	.001	3.672	43.260
	3	5.908	8.065	.000	30.941	19.126
	4	30.900	9.821	.005	61.386	.414

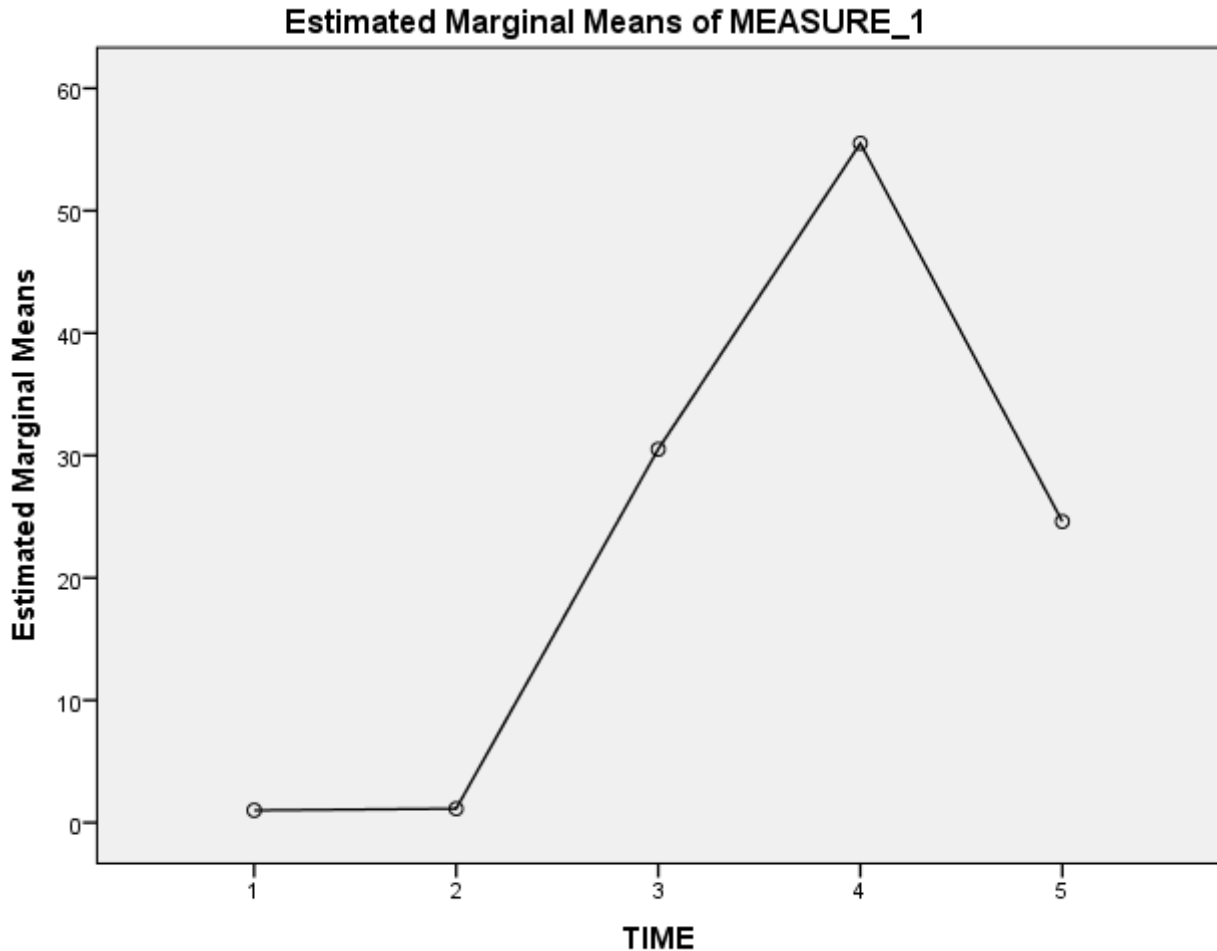
Source: Author's Own creation

**Table 12 Multivariate Tests**

	Value	F	Hypo df	Err df	S.	Partial Eta Sq.
Pillai's trace	.684	10.835	4	20	.000	.684
Wilks' lambda	.316	10.835	4	20	.000	.684
Hotelling's trace	2.167	10.835	4	20	.000	.684
Roy's largest root	2.167	10.835	4	20	.000	.684

If multivariate check is important ( $p < 0.05$ ), that specifies there is a statistically substantial difference among groups for at least 1 of all the dependent variables. In the above table, all significant values are below the range of 0.05. Hence, the dependent variable proved the determination of specific variables driving the complete multivariate outcome.

**Profile Plots**



**Figure 2 Profile Plots**

The above tables and graph demonstrates the trend and progress of MER&ACQ in the Indian industries. The test tables reveal p value less than 0.005 which indicates the significance trends and progress of MER&ACQ in the business sector of India. Thus, the null hypothesis has been denied.

**POST MER & ACQ**

**Table 13 Inside Subjects Factors**

TIME	Dep Variable
1	OPERATINGPROFITPOST
2	NETPROFITPOST
3	CURRENTRATIOPOST
4	ASSETTURNOVERRATIOPOST
5	CASHEARNINGSRETENTIONRATIOPOST

**Table 14 Descriptive Statistics**

	M	SD	N
OPERATING PROFIT(POST)	17.55%	13.426%	25
NET PROFIT(POST)	43.30	66.715	25
CURRENT RATIO(POST)	34.31	153.426	25
ASSET TURNOVER RATIO(POST)	.74	.655	25
CASH EARNINGS RETENTION RATIO(POST)	53.18	38.675	25

Source: Author’s Own creation

**Table 15 Multivariate Tests<sup>a</sup>**

Effect	Value	F	Hypothesis df	Err df	S.	Partial Eta Sq.	
TIME	Pillai's Trace	.814	23.021 <sup>b</sup>	4	21	.000	.814
	Wilks' Lambda	.186	23.021 <sup>b</sup>	4	21	.000	.814
	Hotelling's Trace	4.385	23.021 <sup>b</sup>	4	21	.000	.814
	Roy's Largest Root	4.385	23.021 <sup>b</sup>	4	21	.000	.814

Source: Author’s Own creation

If multivariate check is significant ( $p < 0.05$ ), it specifies that there is a statistically substantial variance between groups for at least 1 of all the dependent variables. In the above table, all significant values are below the range of 0.05. Hence, the dependent variable proved the determination of specific variables driving the complete multivariate outcome.

**Table16 Mauchly's Sphericity<sup>a</sup> Test**

Inside Subjects Effect	Mauchly's W	App. Chi-Sq.	df	S.	Epsilon <sup>b</sup>		
					Greenhouse-Geisser	Huynh-Feldt	LB
TIME	.003	130.337	9	.000	.345	.359	.250

Source: Author’s Own creation

Mauchly's Sphericity Test is stated as portion of the productivity when leading a recurrent measure in ANOVA. The assessment produces a p-value that designates whether the supposition of Sphericity has been disrupted. If the value of p related with Mauchly's Test is fewer than the selected level of alpha ( $< 0.05$ ), then the supposition of Sphericity has been disrupted. If Sphericity is disrupted, changes like the Greenhouse-Geisser, Huynh-Feldt corrections could be

used to precise the violation and confirm the results' validity. But for the present hypothesis p values are below 0.05 which represents that Sphericity is not violated and rate of yield is high.

<b>Table 17 Tests Within-Subjects Effects</b>							
Source		Type 3 Sqs	df	M2	F	S.	Partial Eta Sq
TIME	Sphericity Assumed	43591.982	4	10897.995	1.788	.137	.069
	Greenhouse-Geisser	43591.982	1.378	31628.491	1.788	.190	.069
	Huynh-Feldt	43591.982	1.435	30383.256	1.788	.189	.069
	Lower-bound	43591.982	1.000	43591.982	1.788	.194	.069
Error(TIME)	Sphericity Assumed	585066.363	96	6094.441			
	Greenhouse-Geisser	585066.363	33.078	17687.471			
	Huynh-Feldt	585066.363	34.434	16991.104			
	Lower-bound	585066.363	24.000	24377.765			

Source: Author's Own creation

<b>Table 18 Tests Within-Subjects Contrasts</b>							
Source	TIME	Type 3 Sqs	df	M2	F	S.	Partial Eta Sq
TIME	Linear	2057.377	1	2057.377	2.883	.102	.107
	Quadratic	1480.559	1	1480.559	.190	.667	.008
	Cubic	36448.846	1	36448.846	15.147	.001	.387
	Order 4	3605.199	1	3605.199	.267	.610	.011
Error(TIME)	Linear	17124.513	24	713.521			
	Quadratic	186713.169	24	7779.715			
	Cubic	57751.111	24	2406.296			
	Order 4	323477.570	24	13478.232			

Source: Author's Own creation

<b>Table 19 Tests of Between-Subjects Effects</b>						
Source	Type 3 Sqs	df	M2	F	S.	Partial Eta Sq
Intercept	111121.370	1	111121.370	21.009	.000	.467
Err	126939.008	24	5289.125			

Source: Author's Own creation



**Estimated Means of Marginal**

<b>Table 20 Estimates</b>				
TIME	M	Std. Error	95% Confidence Interval	
			LB	UB
1	17.552	2.685	12.011	23.094
2	43.298	13.343	15.759	70.837
3	34.314	30.685	-29.017	97.645
4	.737	.131	.467	1.008
5	53.176	7.735	37.212	69.141

Source: Author's Own creation

<b>Table 21 Pairwise Comparisons</b>						
(I) TIME	(J) TIME	M Difference (I-J)	Std. Error	S. <sup>b</sup>	95% Confidence Interval for Difference <sup>s</sup>	
					LB	UB
1	2	-25.746	13.621	.709	-67.840	16.349
	3	-16.762	30.745	1.000	-111.780	78.257
	4	16.815*	2.638	.000	8.663	24.967
	5	-35.624*	8.462	.003	-61.775	-9.473
2	1	25.746	13.621	.709	-16.349	67.840
	3	8.984	34.691	1.000	-98.230	116.198
	4	42.561*	13.341	.039	1.330	83.791
	5	-9.878	12.226	1.000	-47.663	27.906
3	1	16.762	30.745	1.000	-78.257	111.780
	2	-8.984	34.691	1.000	-116.198	98.230
	4	33.577	30.706	1.000	-61.321	128.474
	5	-18.862	33.645	1.000	-122.843	85.119
4	1	-16.815*	2.638	.000	-24.967	-8.663
	2	-42.561*	13.341	.039	-83.791	-1.330
	3	-33.577	30.706	1.000	-128.474	61.321
	5	-52.439*	7.772	.000	-76.458	-28.420
5	1	35.624*	8.462	.003	9.473	61.775
	2	9.878	12.226	1.000	-27.906	47.663
	3	18.862	33.645	1.000	-85.119	122.843
	4	52.439*	7.772	.000	28.420	76.458

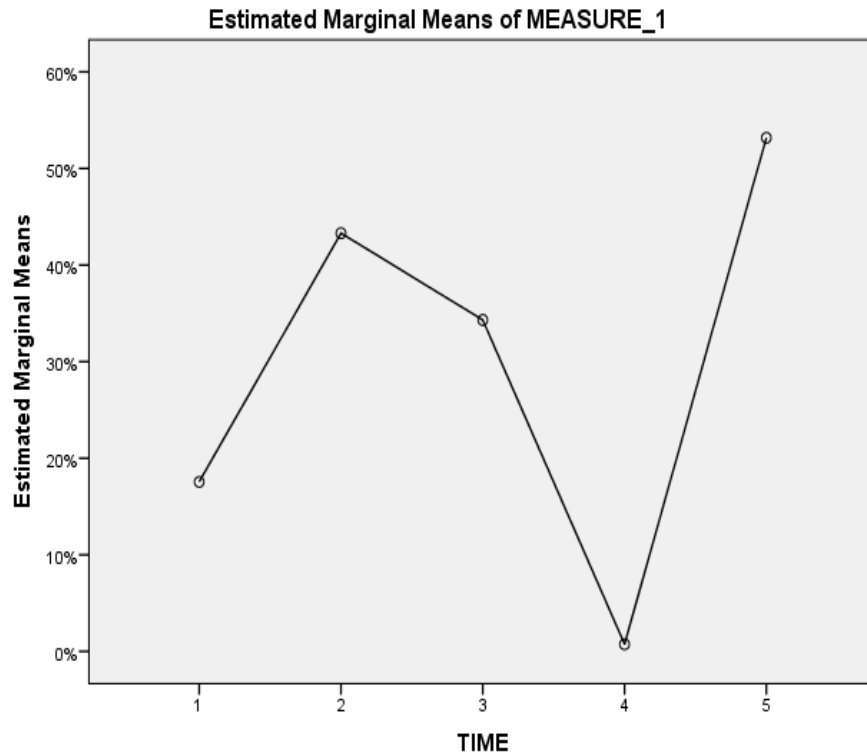
Source: Author's own creation

<b>Table 22 Multivariate Tests</b>						
	Value	F	Hypothesis df	Error df	S.	Partial Eta Squared
Pillai's trace	.814	23.021 <sup>a</sup>	4	21	.000	.814
Wilks' lambda	.186	23.021 <sup>a</sup>	4	21	.000	.814
Hotelling's trace	4.385	23.021 <sup>a</sup>	4	21	.000	.814
Roy's largest root	4.385	23.021 <sup>a</sup>	4	21	.000	.814

Source: Author's own creation

If multivariate check is significant ( $p < 0.05$ ), it specifies that there is a statistically substantial difference among groups for at least 1 of all the dependent variables. In the above table, all significant values are below the range of 0.05. Hence, the dependent variable proved the determination of specific variables driving the complete multivariate outcome.

**Profile Plots**



**FIGURE 3**

The above tables and graph demonstrates the trend and progress of MER&ACQ in the Indian industries. The test tables reveal p value less than 0.005 which indicates the significance trends and progress of MER&ACQ in the business sector of India. Thus, the null hypothesis has been denied.

**8. IMPLICATIONS OF STUDY**

The implication of the research could be based on the Mergers and Acquisitions (MER&ACQ) which is been influenced from operational performance and financial from the different sectors of selected industries in India. Economic performance ratios are categorized by the ratios which comprises Operating Profit ratio, Inventory turnover ratio, Current ratio, Asset turnover ratio, Cash earnings retention ratio, Net Profit ratio, Firm size ratio, Stock price ratio and Current tax ratio. Values which are utilized to perform the ratios are Mean, Range, Standard Deviation and Constant of the variation. Mean, Range, Standard Deviation and Coefficient of the variation is divided into pre-acquisition and post-acquisition.

Reliability was performed to analyze the assessment of the internal consistency. Ca value determines the reliability statistics. It was performed with the value of 0.827.

Company profile parameters and their demographic details are collected. Descriptive statistics method has been measured to denote the distributions, variability and the central tendency. For the descriptive statistics, totally 25 companies were measured with mean, median, minimum, maximum and standard deviation values for pre-merger and acquisition. The outcome of the result was that the 6<sup>th</sup> and 9<sup>th</sup> count of the observations which are present inside the data are grouped for the pre-merger and acquisition. Data set value which was calculated through adding up all the records and isolated by means of the sum of figures which is considered as the normal. As for the same companies, post-merger and acquisitions were carried out for the descriptive statistics. The result presented with the output that the 6<sup>th</sup> and 9<sup>th</sup> count of the observations which are present inside the data group was measured for the post-merger and acquisition.

## 9. DISCUSSION ON RESULTS

Hypothesis describes whether the Indian industries are with significant trends and progress of M and A are not. For the general linear model of pre M and A, different subject factors were analyzed namely operating profit, current ratio, asset turnover ratio, cash earnings retention ratio and net profit. Descriptive analysis was carried out with the factors of pre M and A such as operating profit, current ratio, asset turnover ratio, cash earnings retention ratio for mean, number of samples and standard deviation.

**Multivariate tests** were analyzed with the effects of Pillai's trace, Wilks Lambda, Hotelling's Trace and Roy's Largest Root. The significant values for these effects were less than 0.05. The dependent variable proved that the determination for specific variables drives with the complete multivariate outcome. **Mauchly's Sphericity test** was carried out to state the leading recurrent measures in ANOVA. It resulted that P-value which were below 0.05 represented that Sphericity was not violated and the rate of the yield was high. Tests within subject effects were examined for TIME and error. The sources for which it was calculated like sphericity assumed greenhouse-geisser, huynh-feldt and lower bound. Tests within the subject contrasts were calculated for various times such as linear, quadratic, cubic and order 4. Tests between the subject effects were calculated for the intercept and error.

**Estimated Means of Marginal** was calculated for five different interval times with 95% confidence interval. Pairwise comparisons were evaluated with five different times of 95% confidence interval. Multivariate tests were investigated for various tests such as Pillai's trace, Wilks lambda, hotel ling trace and Roy's largest root. All the significant values were presented below the range of 0.05. The dependent variable proved the determination of the specific variables which drives the complete multivariate outcome. Profile plots were revealed with the p-value that could be lower than 0.005 and the null hypotheses has been denied.

Inside the subject factors, post M and A were determined by operating profit, net profit, current ratio, asset turnover ratio and cash earnings retention ratio. **Descriptive statistics** was carried out for these factors with average, standard deviation and samples count. Multivariate tests were performed with the effects of Pillai's trace, Wilks lambda, hotelling trace and Roy's main root. It resulted that the significant values were below 0.05. P-values of the Mauchly's test were carried out with fewer levels of selected alpha. P- Value represents the sphericity was not violated and the rate of the yield was high. Tests within the subject effects were calculated by the source such as sphericity assumed, greenhouse-geisser, huynh-feldt and lower bound. Tests inside the subjects contrast for various times such as linear, quadratic, and cubic, order 4. Tests of the between the subjects belongings were analyzed for the intercept and for the error. Estimated

means of marginal were analyzed with five different intervals of 95 percent confidence interval. Pairwise comparisons were carried out for five different time intervals with 95 percent confidence intermission for the variations. Multivariate tests were performed for Pillai's trace, Wilks lambda, hotelling trace and Roy's greatest root and the significant values were determined below 0.05. The dependent variable proved the determination of the specific variables in which it drives the complete multivariate outcome. Profile plots were demonstrated with the p-value which was less than 0.005 and indicates the progress and significance trends of M and A. This null hypothesis was denied.

#### **10. LACUNAS/BOTTLENECKS OF THE PRESENT STUDY**

The present research, like any other study, has its own limitations. **In First hand**, one of the main drawbacks is that it solely relies on quantitative methods and does not incorporate a qualitative approach for its analysis. **Secondly**, the study has considered only limited sample size and secondary data pertaining to only last 7 years. **Last But Not The Least** only Indian companies were considered in the present study, the researcher has not taken into account any outbound companies or literature for the study. As a result, the findings may lack generalizability. However, despite this limitation, the research offers valuable insights into identifying mergers, acquisitions, and economic efficiency in India.

#### **10. SCOPE FOR FURTHER RESEARCH**

Future research in acquisitions, mergers and in economic efficiency in India is a great benefit obtained which is supplemented by the empirical evidence from the sectoral analysis. Investigating activities of **Mergers and Acquisitions (M&A)**, various industries are compressed within the economy of India. It is not only limited for the finance, healthcare, technology, telecommunication and manufacturing. From organizing empirical studies and in-depth studies in each sector, transactions of the acquisitions and mergers can reveal the effects on the trends and progress, economic efficiency, innovation, market welfare and competition in market.

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