

Research on the Impact of Determinants of Mergers and Acquisitions in the Indian Chemical Sector: A Case Study of Sumitomo Chemical India and Excel Crop. Care Ltd

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Abstract: *This research has analysed the determinants of merger and acquisition in the Indian Chemical Market by analysing its potential challenges and opportunities. The introduction has offered a brief understanding of the Indian Chemical Market and the challenges present in the merger and acquisition initiatives. After that, it has designed the aims objectives and the research questions based on the topic. Implementing secondary research methodology, it has analysed the existing articles related to the topic to meet the objectives. In order to place a practical example, it has demonstrated the case study of Sumitomo Chemical India which has been recently merged and acquired. Depending on the case study, it has discovered different factors related to the merger and acquisition in the Indian Chemical sector. Also, for a better understanding of the M&D initiatives it has mentioned different financial and non-financial factors associated with global mergers and acquisitions. The methodology section has briefly analysed the incorporated methodology and approach for conducting the research. After that, it has conducted a thematic analysis for establishing the argument. It has been concluded with a conclusion by summarising the findings for better understanding.*

Keywords: Merger and Acquisition, Indian Chemical Market, Indian Pharmaceutical Organisations, Cost-Effectiveness, Financial Stability.

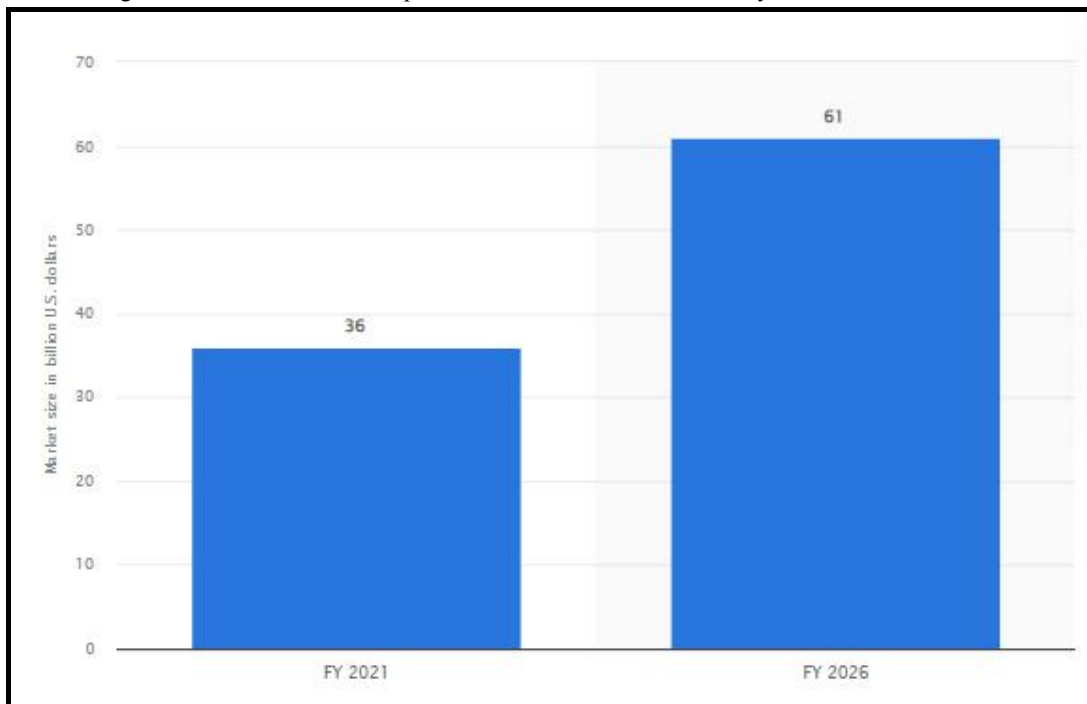
I. INTRODUCTION

Background of study

In current business dynamics, merger and acquisition has become one of the most important market expansion procedures which helps to integrate with another organisation of the targeted market. Mergers and acquisitions introduce different challenges for business owners to make them face financial barriers (DePamphilis, 2019). Different trade regulations, currency fluctuation, and market potential are some of the key barriers to the merger and acquisition process. Market needs are another factor of merger and acquisition which impacts the merging process and can affect the outcome.

In that case, it became essential to analyse the factors of merger and acquisition in the Indian Chemical sector as it can create different barriers for the organisations. According to the research, it has been identified that in the year 2021, the value of the Indian Chemical market was 36 billion U.S. dollars (Statista, 2024). It indicates that the market has the potential to expand its business activities by merger and acquisition. Focusing on these factors and statistics, this research will identify the potential barriers and opportunities for merger and acquisition in the Indian Chemical sector. The significance of this research is that it will help to understand how the merger and acquisition process is affected by different financial and regulatory factors. Another major factor is that it will open the scope for further research about the strategies on how the organisations can mitigate the introduced barriers of merger and acquisition process in the Indian Chemical Sector. In order to get a practical idea about the research topic, it will focus on a real-life organisation

in the Indian Chemical sector which is Sumitomo Chemical India. A real-life case study will help the readers understand the significance of the research topic in relation to current business dynamics.



Graph 1: Value of the Indian Chemical sector

(Source: Statista, 2024)

Aims and Objectives

- The primary aim of this research is to identify different factors which impact the merger and acquisition process in the Indian chemical sector by using real-life cases.
- To examine the potential opportunities of merger and acquisition in the Indian Chemical sector.
- To analyse the key barriers to merger and acquisition in the Indian Chemical sector.
- To demonstrate the establishment of Sumitomo Chemical India by merger and acquisition process.
- Research questions
- What are the potential opportunities for merger and acquisition in the Indian Chemical sector.?
- What are the key barriers to merger and acquisition in the Indian Chemical sector.?
- How was Sumitomo Chemical India established through the merger and acquisition process?

II. LITERATURE REVIEW

Empirical study

The potential opportunities for merger and acquisition in the Indian Chemical sector

According to, Scalera *et al.*, (2020), the Indian economy depends on the software sectors and the chemical and pharmaceutical industries heavily. The reason behind this dependence is the domestic innovation system which has been affected by the improvements in standards of intellectual property protection. Also, the investment in engineering and domestic science-oriented educational sectors has influenced the country to focus on continuous innovation. For example, Indian pharmaceutical organisations including, Ranbaxy and Dr Reddy's are the leading organisations worldwide. It indicates that the Indian chemical sector has the opportunity for innovation and continuous development in terms of sustainability and financial stability.

Andreoniet *al.*, (2021), have stated that focus on the R&D, free manufacturing stage and design indicates the virtualisation process for product development. 4IR technologies enhance the data treatment and image recognition process by enhancing its prospecting activities. This finding indicates that the merger and acquisition process in the Indian chemical industry has the scope for enhancing the industry economy. India can enhance its economic dynamics by investing in the chemical sector.

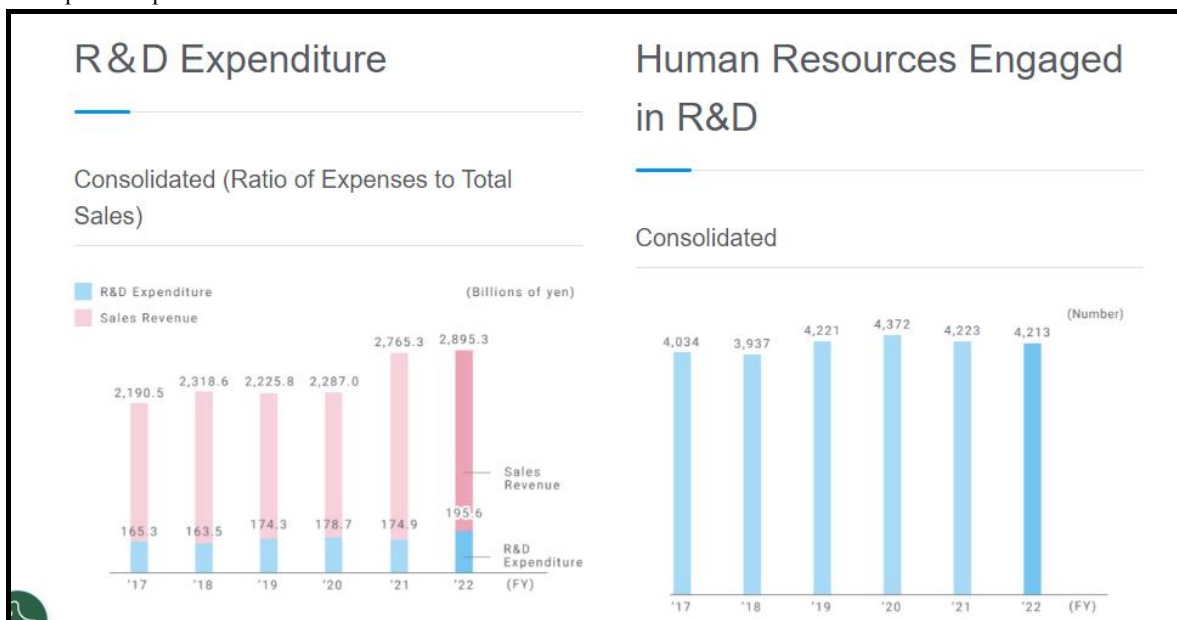
The key barriers to merger and acquisition in the Indian Chemical sector

According to, Vishwakarma *et al.*, (2019), the chemical industry of India requires a robust solution for mitigating the supply chain management issues. This industry is one of the most potential financial resources for the Indian economy. In that case, supply chain management is one of the most potential issues for the industry which requires immediate solution. Disruption in supply chain management can reduce the effectiveness of the industry and increase and availability of the product. For the merger and acquisition, it is required to focus on the supply chain barriers in the chemical industry of India so that it is possible to execute the plan effectively.

According to an article published by Deloitte, (2019), it has been identified the merger and acquisition deal value in the Indian chemical industry has declined in the year 2019 in comparison to 2018. In the year 2019, the deal value was US\$500 million which indicates that it has reduced than the previous year. This fluctuation in the industry indicates that the merger and acquisition infrastructure in the Indian chemical industry needs to be developed more. It can create different barriers for business owners by reducing the market value of the industry.

The establishment of Sumitomo Chemical India by merger and acquisition process

In the context of the establishment of Sumitomo Chemical India by merger and acquisition, it can be stated that it has been a great example for analysing different factors associated with the merger and acquisition process in the industry. According to Sumitomo-chem, (2019), Sumitomo Chemical India has started its journey from the 1st of the year 2019. This organisation has been established by the merger and acquisition initiatives of Exel Crop Care Limited and Sumitomo Chemical India Limited. The R&D Expenditure of Sumitomo Chemical India indicates that it has a strong focus on the research and development process. These initiatives reflect the enrolment of innovation through the merger and acquisition process.

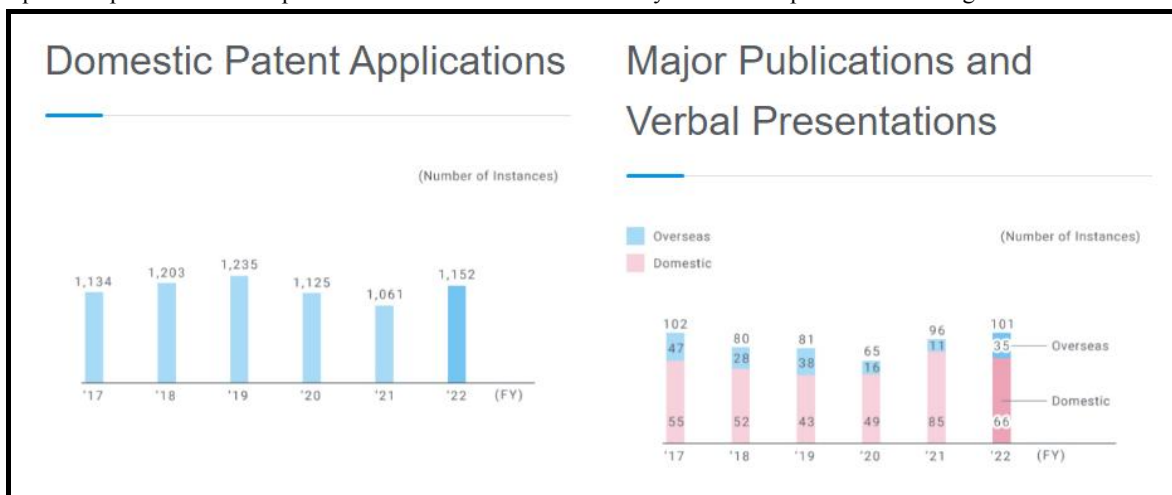


Graph 2: Enhancement in R&D after the merger and acquisition of Sumitomo Chemical India

(Source: Sumitomo-chem, 2024)

The consolidated ratio of human resource engagement of Sumitomo Chemical India seems good. Depending on the analysis it can be stated that the merger and acquisition process includes an enhancement in the human resource

engagement process. After the acquisition process, the number of domestic patent applications has been increased by 1,152. The verbal presentation among major publications has been enhanced by 35 for overseas and 66 for domestic (Sumitomo-chem, 2024). Based on the analysis of Sumitomo Chemical India it can be interpreted that, the merger and acquisition process have the potential to increase financial stability and market potential of an organisation.



Graph 3: Domestic Patent Applications and Major Publications and Verbal Presentations of Sumitomo Chemical India

(Source: Sumitomo-chem, 2024)

III. RESEARCH GAP

The empirical analysis has offered a brief introduction to the potential barriers and opportunities of the merger and acquisition process in the chemical industry. In that case, it has a lack of financial barriers and opportunities for merger and acquisition in the global business context. Focusing on these factors will analyse the financial opportunities and barriers of the merger and acquisition process in the global business context. Firstly, mergers and acquisitions in a foreign country include different trade policies and costs (Paudyalet *et al.*, 2021). In that case, it can be difficult for the organisations to evaluate different trade policies at the same time. For this challenge, businesses might face difficulties while merging and acquiring organisations in foreign countries. The second factor is the differences in market potential and GDP, different countries have different GDP growth and market potential it can be difficult for organisations to calculate the exchange rate (Beckmann *et al.*, 2020). The obstacle can cause to take wrong decisions about mergers and acquisitions that can impact its cost-effectiveness.

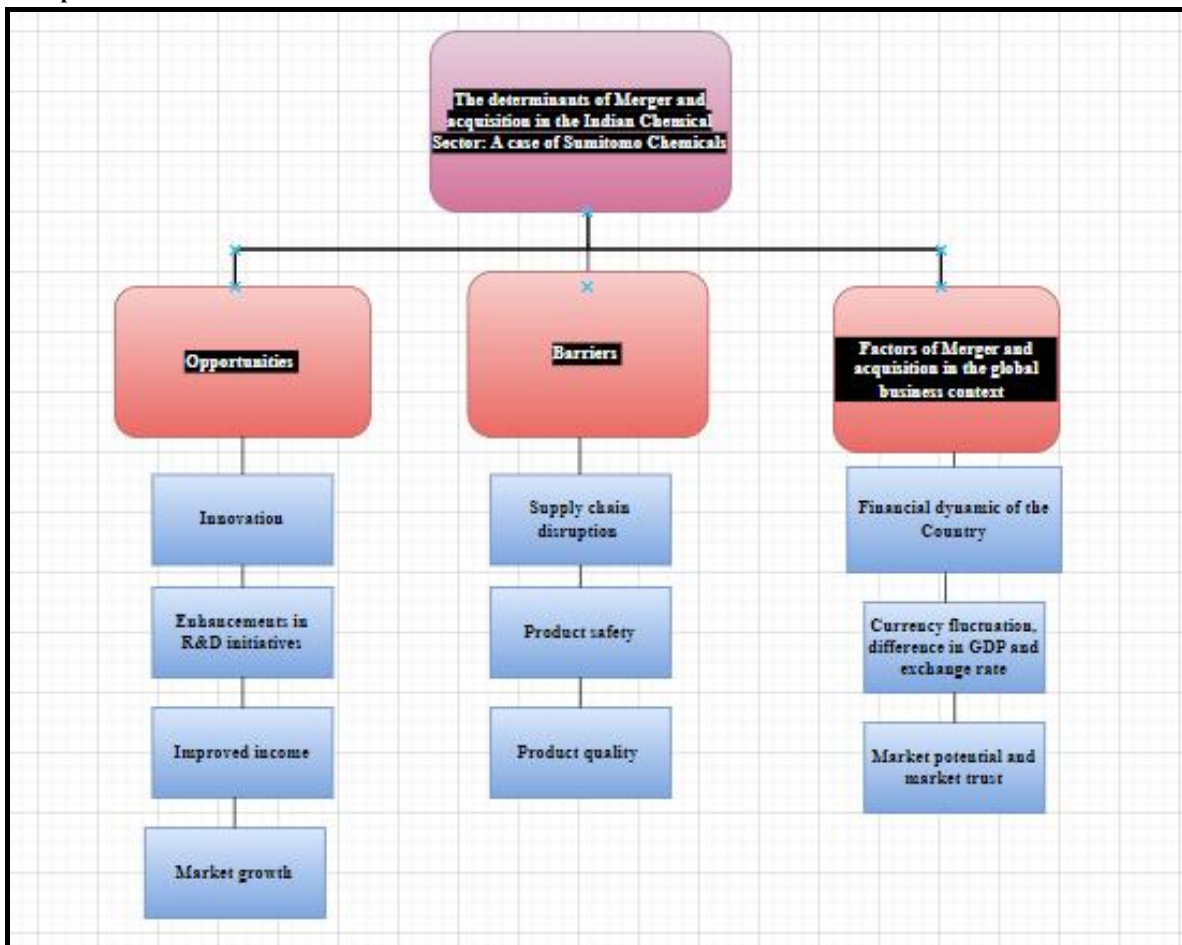
Another major factor is the fluctuation in the trade cost, different trade cost standards can significantly impact the cost-effectiveness of the organisation by reducing financial stability. In the context of merger and acquisition in the global business, differences in the regulatory framework are another potential issue for businesses which can impact the business process (Piesseet *et al.*, 2022). Sometimes it can be difficult for organisations to maintain different product safety standards and other regulatory frameworks at the same time. It can result in reducing market trust and making the businesses face legal obstacles. For the chemical business industry maintenance of product safety is the most important part which ensures the well-being of the customers. In that case, the chemical organisations might face different product safety standards while merging and acquiring the organisations in the global business environment.

On the other hand, it also offers different opportunities for businesses related to mergers and acquisitions in the global business context. It helps to expand the business among global audiences by merging and acquiring any organisation in the targeted country. Relevant investment choices associated with mergers and acquisitions can help businesses increase their profitability and market reach (Renneboog *et al.*, 2019). Also, it helps to remove the cultural barriers and language barriers by implementing different communication strategies for the targeted area. Businesses can evaluate the market potential and impact the living standard of people by generating jobs in the acquired country and improving the

purchase behaviour of the customers. This strategy significantly impacts the profitability of the organisation by increasing trust in the market.

Apart from that, by recruiting the local communities in the business the organisations can promote the well-being of the people from the targeted country. In that case merger and acquisition process princess the organisations to treat the local community as the centre of the decision-making process. A proper M&A deal can increase the organisation and value by enhancing its financial dynamics (Makedon&Korneyev, 2023). In the context of competitive advantage, the merger and acquisition process help to establish a strong position among global competitors by incorporating the local partner of the targeted country. Businesses can also expand their product line and meet diverse customer needs by merging and acquiring organisations from the targeted area. It will help to increase its market needs and profitability by evaluating the market shifts and integrating different strategies.

Conceptual framework



Graph 4: Conceptual Framework
(Source: Created by the author)

IV. METHODOLOGY

Research approach

A research approach defines the procedure that has been selected by the researchers to collect, store, process analyse and interpret the resources. Depending on the characteristics, it has been divided into two sections data collection and data analysis which helps to distinguish the process of collecting and analysing the resources. The data collection

process is divided into three sections, qualitative, quantitative and mixed methods. On the other hand, the data collection process has two sections including inductive and deductive that explains different methods for overserving the resources. A secondary research approach which is also known as a qualitative approach has been applied in this research (Ruggiano& Perry, 2019). This approach permits the researchers to collect and analyse the pre-existing information presented by the authors. It considers statistical databases, a literature review, content analysis and case studies for identifying the best method. In order to conduct this research, a literature review and the case study of Sumitomo Chemical India have been applied. Also, an inductive data analysis process has been used to observe the pattern of the resources.

Research Philosophy

A research philosophy is the belief according to which the type of resources about a phenomenon needs to be collected, analysed and processed. It is categorised into four types of philosophy, namely positivist, interpretivist, pragmatist and realistic research philosophy. These philosophies seek to measure the resources. Pragmatic research philosophy involves the research design which deals with operational decisions that relies on the best method for identifying the answers that addresses the research questions (Kelly &Cordeiro, 2020). Researchers have used the pragmatic research philosophy to comprehend the determinants of mergers and acquisitions in the Indian chemical sector. Using this philosophy, researchers have collected and observed a variety of resources relevant to the topic and conducted an analysis of the case study to meet the expected conclusion.

Data collection

The secondary resources that were already published were referred to conduct this research. The secondary resources include case studies, literature reviews and journals which can support in making authentic decisions. Using Google Scholar, library archives researchers have gathered the published resources for the research (Borgman *et al.*, 2019). It has used the search strings like, *the factors of merger and acquisition in the Indian chemical sector*, and the *key barriers of marginal acquisition process in the Indian chemical sector and the development of Sumitomo Chemical India*. These keywords helped the researchers to identify the real-life examples and previous challenges.

Data analysis

The data analysis links the collected resources with the objectives before conducting an analysis. To carry out the data analysis process, researchers have applied an inductive data analysis method to link the objectives with the empirical evidences. The inductive data analysis mode influences the researchers to outline the patterns of the resources and key information by observing them (Pearse, 2019). Also, it has evaluated the case study of Sumitomo Chemical India to highlight the common factors of merger and acquisition in the Indian chemical sector which can impact its financial dynamics.

Sample design

The financial data of both Sumitomo Chemical India Limited and Excel crop care limited are collected over the course of the last ten operating years. The financial performance of both companies has been evaluated in both pre- and post-acquisition period in respect of its Gross Profit, Net profit and Operating profit etc

Type of study

The sample T-test in this statistical analysis has been performed on the financial data of the two companies in order to determine the t-value, p-value and significant value. The coefficient of time for both chemical firms have been articulated for evaluating the post-acquisition and pre-acquisition factors.

The secondary sources for this research have been assessed through multiple annual reports, statistical reports and performance analytics reports. The statistical interpretation based on the secondary data sets have been assessed through SPSS software.

Method of analysis

Gross profit, net profit, operating profit and return on capital investment are some of the profitability ratios that have been determined from the post and pre-acquisition time for two pharmaceutical firms. As a result, the profitability and operational performance of both Sumitomo Chemical and Excel corp. have been analysed through t-value and p-value analysis.

Limitation of the study

The lack of time has limited the sample size of the research within two companies that could be increased with extended deadlines. Lack of large sample size has limited the knowledge of the research that has disrupted the future scopes of this research.

V. ANALYSIS, DISCUSSION AND RESULT

Introduction

The implications of acquisition and mergers on the bio-chemical sector of India has been demonstrated in this study through performing comprehensive statistical computation on the financial data of two prominent chemical firms. The period ratio of both post and pre-acquisition of the two chosen bio-chemical companies have been demonstrated in segment for analysing yearly GP, NP and OP ratios. Furthermore, 1 years' worth of post-acquisition and pre-acquisition data analysis has been performed during statistical analysis in order to determine the mean, standard deviation and coefficient of variations for Indian chemical companies undergoing acquisition.

Companies chosen for the research

Excel Crop care limited and Sumitomo Chemical India Limited are two chosen chemical corporations for this study that have undergone acquisition in the last five years. Both of the Indian chemical corporations specialise in creating agrochemical products that can be utilised by Indian farmers for increasing agricultural productivity.

Thematic analysis

The above three analysis helps in the identification of an equal number of themes that facilitates the research process. It displays different factors of merger and acquisition in the Indian Chemical sector which can impact the decisions of the business leaders. The themes represent the potential benefits of merger and acquisition in the Indian chemical industry demonstrated by the case of Sumitomo Chemical India. Secondly, the potential challenges of merger and acquisition in the Indian Chemical industry are the financial factors which can impact the merger and acquisition in the global business environment.

Theme 1: The potential benefits of merger and acquisition in the Indian chemical industry based on the case of Sumitomo Chemical India

The case of Sumitomo Chemical India has revealed that R&D is the most important factor that drives mergers and acquisitions in the Indian Chemical Industry. After the M&D deal, the organisation has started to increase their investment in R&D which has significantly impacted their application of the patents. It can be stated that M&D significantly impacts the innovation process which helps the organisations to increase their productivity and establish a strong position in the market (Christofiet *al.*, 2019). Another major determinant is profitability, as per the empirical evidence it has been noticed that the Indian market primarily focuses on the chemical and pharmaceutical industries based on its market demand.

Theme 2: The potential challenges of merger and acquisition in the Indian Chemical industry

As per the empirical evidence, it has been identified that supply chain management is the most potential barrier to merger and acquisition initiatives in the Indian Chemical Industry. Based on the disruption in the supply chain management can reduce the availability of the materials and impact customer satisfaction. Supply chain disruption also reduces the quality of the materials which can significantly affect the service quality of the businesses (Min *et al.*, 2019). This challenge can reduce customer satisfaction and market trust by providing low-quality services. Another major factor is product safety standards, the chemical industry needs to maintain the product safety standard to avoid legal obstacles. In that case, supply chain disruption can increase the ethical concerns about the product safety standards and impact the organisational value. Following these factors, organisations can make effective decisions about mergers and acquisitions in the Indian Chemical industry to increase its profitability.

Theme 3: The financial factors of merger and acquisition in the global business context

In the global business context, mergers and acquisitions need to focus on different financial and non-financial factors which might impact profitability. Firstly, before merging and acquiring, it is required to analyse the currency fluctuations and the exchange rate of the global market. Proper analysis of the currency fluctuation and exchange rate can impact the investment choices which can help to meet the outcome. Differences in the GDP of multiple countries also impact merger and acquisition decisions by introducing different market growth and living standards (Hong *et al.*, 2022). Another determinant is the cultural differences and communication barriers that can be overcome through the merger and acquisition process.

Statistical Analysis

Ratio Analysis

Sumitomo Chemical India Limited

Post acquisition period ratio (Table 1)

Year	GP%	NP%	OP%	ROCE%	RONW%	EPS	DPS
2023	20.29	14.33	18.66	27.15	21.15	10.09	1.2
2022	20.78	14.15	19.12	29.81	22.53	8.69	1
2021	19.11	13.06	17.14	29.07	22.6	6.92	0.8
2020	14.22	8.48	11.02	24.23	17.01	4.12	0.55
2019	13.33	7.51	11.6	25.2	20.59	3.35	2

The analysis reflects that the GDP rate of the company has grown significantly over the years with 2023 accounted to be around 20.29%. Moreover, the ever-increasing ROCE percentage is another indication of more profit generation for Sumitomo Chemical India Limited due to the maintenance of merger and acquisition within the Indian chemical sector.

Pre acquisition period ratio (Table 2)

Year	GP%	NP%	OP%	ROCE%	RONW%	EPS	DPS
2018	12.94	7.59	11.55	22.99	15.44	2.91	0
2017	13.27	7.36	12.33	16.31	9.71	2.38	0
2016	15.01	8.44	13.98	35.97	21.82	2.77	0
2015	9.16	4.93	8.22	25.13	15.04	1.49	0
2014	7.73	5.08	6.59	22.34	16.86	1.42	0

Pre-acquisition period shows low GDP growth compared to the post acquisition period ratio, where GDP percentage was around only 12.94%. The same remains for other performing metrics that displays an overall slow growth rate due to the lack of alignment with merger and acquisition that create issues within the process of maintaining market potential and growth work aspects of the industry.

Excel Crop Care Limited

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DOI: 10.48175/IJAR SCT-18842



Post acquisition period ratio (Table 3)

Year	GP%	NP%	OP%	ROCE%	RONW%	EPS	DPS
2023	12.53	7.65	10.96	19.67	14.6	83.54	5.65
2022	11.69	7.6	10.86	21.64	14.33	74.69	5.6
2021	11.96	6.89	9.65	19.65	13.6	80.65	4.69
2020	10.65	5.68	9.45	18.62	11.65	81.26	4.5
2019	11.52	6.65	10.01	20.99	14.66	79.49	6.25

Based on the analysis, it is evident that the GDP rate has fluctuated greatly over the years with a 12.53% GDP rate estimated in 2023. Fluctuating RONW implies that the company is constantly struggling with the generation of the profit due to the lack of effective business strategies based on the ongoing issues due to currency fluctuations and the exchange rate of the global market.

Pre-acquisition period ratio (Table 4)

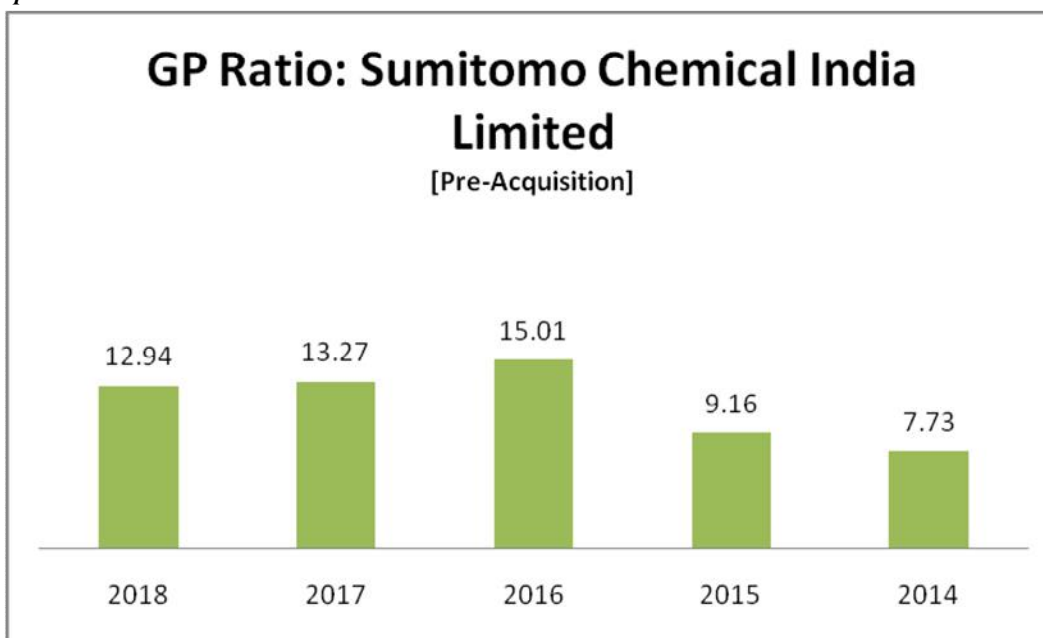
Year	GP%	NP%	OP%	ROCE%	RONW%	EPS	DPS
2018	12.2	7.08	10.6	14.61	15.63	73.88	8.75
2017	10.83	7.44	10.01	15.06	16.18	64	11.5
2016	10.89	6.79	9.3	14.57	15.7	54.14	12.5
2015	10.46	6.38	8.98	17.62	19.16	58.59	12.5
2014	11.23	6.96	9.99	20.87	23.23	61.11	12.5

The pre- acquisition period ratio of Excel Crop Care has showcased that from 2014 to 2018 the gross profit rate has fluctuated from 11.23% to 12.2% that shows the issues within profit structure of the company before implying determinants of mergers within the Indian chemical industry.

Gross profit ratio (Percentage)

Sumitomo Chemical India Limited

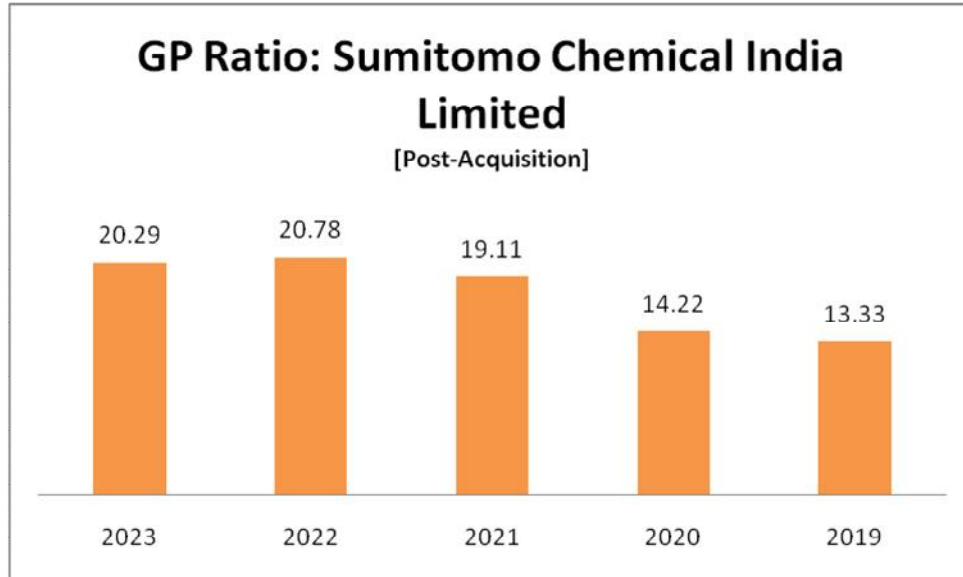
Post-Acquisition Period Ratios



The post-acquisition period of Sumitomo has faced a gross profit ratio of 13.33 by 2019 that was higher than the pre-acquisition period of the company. Besides, the gross profit ratio has been upgraded to 12.53 by 2023 that has

showcased higher chances of profitability and growth rate within the post-acquisition period of the company. This shows the importance of merger and acquisition for increasing the chances of profitability by interpreting market potential and growth work.

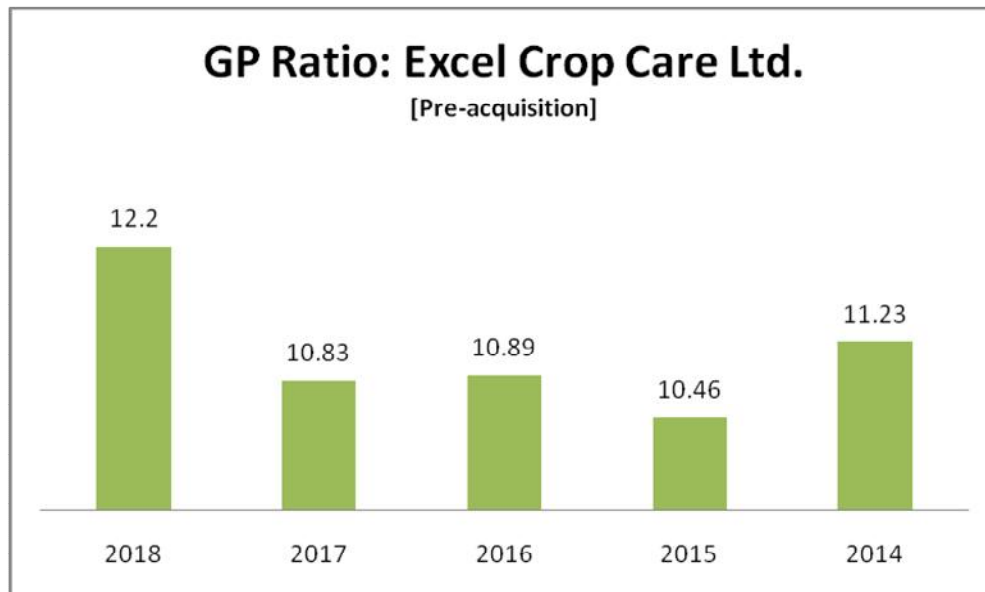
Pre-Acquisition Period Ratios (Chart H)



The gross profit ratio of Sumitomo within the pre-acquisition period was 7.73 by 2014 and gradually it has been upgraded to 12.94 by 2018. This shows the gradual upgradation of gross profit within the pre-acquisition period of the company.

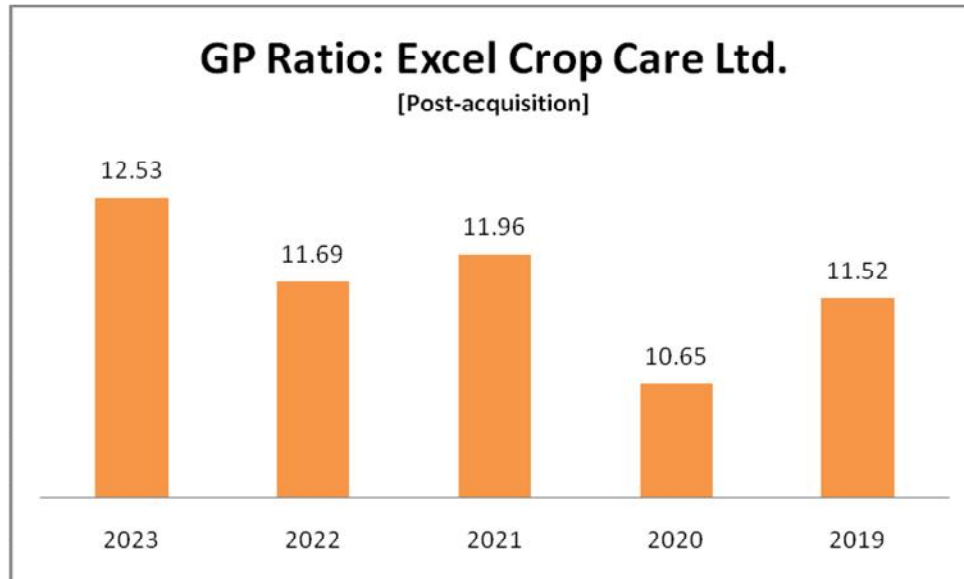
Excel Crop Care Limited

Post-Acquisition Period Ratios



The post-acquisition period of Excel Crop Care has earned an upgradation from 11.52 to 12.53 by 2023 that shows higher chances of profitability within the business companies due to the chances of growth and innovation within the company that helps to optimise new business models.

Pre-Acquisition Period Ratios (Chart H)



The pre-acquisition period of Excel Crop Care has faced a gross profit upgrade from 11.23 to 12.2 by 2018. This shows the limited chances of profitability from the company that is harmful for the business growth.

Descriptive Statistics Analysis

Sumitomo Chemical India Limited

Post Acquisition Statistical Data Analysis (Table 5)

Ratio	Mean	Std. Deviation	Coefficient of Variation
GP	17.5460	3.50968	12.318
NP	11.5060	3.25981	10.626
OP	15.5080	3.90703	15.265
ROCE	27.0920	2.40177	5.769
RONW	20.7760	2.27820	5.190
EPS	6.6340	2.88781	8.339
DPS	1.1100	.55272	.306

The mean value of the post-acquisition period has been calculated to be 17.5460 that shows the accuracy of the data sets based on the gross profit structure of the company. The company has earned multiple opportunities to ensure higher profit structure through the usage of merger and acquisition within the business of the Indian chemical sector.

Pre-Acquisition Statistical Data Analysis (Table 6)

Ratio	Mean	Std. Deviation	Coefficient of Variation
GP	11.6220	3.04716	9.285
NP	6.6800	1.58198	2.503
OP	10.5340	3.04313	9.261
ROCE	24.5480	7.17579	51.492
RONW	15.7740	4.33463	18.789

EPS	2.1940	.70245	.493
DPS	.0000	.00000	.000

The pre-acquisition statistical data analysis of Sumitomo has earned a mean value of 11.6220 for gross profit of the company. This shows the accuracy of the prediction from the statistical data analysis process that is essential for highlighting the role of merger and acquisition in the Indian Chemical Market to ensure increase within profit structure.

Excel Crop Care Limited

Post-Acquisition Statistical Data Analysis (Table 7)

Ratio	Mean	Std. Deviation	Coefficient of Variation
GP	11.6700	.68684	.472
NP	6.8940	.80674	.651
OP	10.1860	.69161	.478
ROCE	20.1140	1.19797	1.435
RONW	13.7680	1.25677	1.579
EPS	79.9260	3.27760	10.743
DPS	5.3380	.72799	.530

The post-acquisition scenarios of Excel Crop Care have showcased that the mean value has been 11.6700 for gross profit and for net profit the value has been 6.8940 that shows the accuracy of the statistical information based on the gradual upgradation of profit structure within the company.

Pre-Acquisition Statistical Data Analysis (Table 8)

Ratio	Mean	Std. Deviation	Coefficient of Variation
GP	11.1220	.66164	.438
NP	6.9300	.38910	.151
OP	9.7760	.64026	.410
ROCE	16.5460	2.72540	7.428
RONW	17.9800	3.27551	10.729
EPS	62.3440	7.39497	54.686
DPS	11.5500	1.62404	2.638

The pre-acquisition period of Excel Crop Care has earned a mean value of 11.1220 that shows the equal distribution of values for the given data set based on the gross profit ratio of the company. Besides, the mean value of net profit has been 6.9300 that defines the average value assessment regarding the net profit values of the company that is essential for increasing the knowledge regarding the process of assessing higher profit rate.

Independent Sample T-Test

Sumitomo Chemical India Limited (Table 9)

Ratio	t-Value	Degree of Freedom	P-Value	Significance
GP	1.285	8	0.981	Non-Significant
NP	-.090	8	0.690	Non-Significant
OP	0.973	8	0.228	Non-Significant
ROCE	2.680	8	0.087	Non-Significant
RONW	-2.685	8	0.065	Non-Significant
EPS	4.860	8	0.209	Non-Significant
DPS	-7.805	8	0.279	Non-Significant

For Sumitomo Chemical, The GP and NP ratio have been demonstrated to have a P-value of 0.981 and 0.691 that is substantially higher than the moderate influence level of P-value such as 0.03. Hence, this value from the financial

dataset of Sumitomo Chemical exhibits moderate influence between the dependent variable and the independent variable while calculating the gross profit and the net profit ratio for the last ten years. On the other hand, ratios such as OP, ROCE, RONW, EPS and DPS have been calculated from the statistical synthesis to be around 0.228, 0.087, 0.065, 0.209 and 0.279 all falls below the moderate influence line of the P-value that is highlighted to be 0.3. For this particular statistical analysis, all of these ratios for Sumitomo are regarded as non-significant due to not possessing a moderate influence level between the dependent and the independent variables.

Excel Crop Care Limited (Table 10)

Ratio	t-Value	Degree of Freedom	P-Value	Significance
GP	2.850	8	0.489	Non-Significant
NP	2.978	8	0.012	Significant
OP	2.246	8	0.269	Non-Significant
ROCE	0.752	8	0.221	Non-Significant
RONW	2.284	8	0.410	Non-Significant
EPS	3.341	8	0.017	Significant
DPS	4.491	8	0.031	Significant

For the instance of the Excel Corp, its gross profit and RONW ratio has been determined to be around 0.489 and 0.410 that is well above the acceptable margin of 0.3 for the statistical P-value. As a result, The GP and RONW of Excel Corp showcases moderate influence between the independent and dependent variables of this research and exhibits significant growth potential after undergoing merger with another Indian chemical firm. However, the NP, OP, ROCE and EPS and DPS all are in the possession of p-values such as 0.012, 0.269, 0.221, 0.017 and 0.031. As the values of GP, OP, ROCE and RONW are under the significant line of 0.05 and therefore indicating no influence between the dependent and the independent variable. Henceforth, none of these four company financial ratios indicates any significant positive growth after going through the merger process.

Coefficient of Time (B)

Sumitomo Chemical India Limited (Table 11)

Factors	Post-Acquisition	Pre-acquisition
GP	5.392	-2.210
NP	-1.034	1.593
OP	3.817	0.092
EPS	-1.158	0.736
MPS (BSE)	20.355	-20.642
MPS (NSE)	19.731	-21.518

For Sumitomo Chemical, the GP factors during both post and pre acquisition have been recorded as 5.392 and -2.210 for comprehending the financial factors of merger and acquisition.

Excel Crop Care Limited (Table 12)

Factors	Post-Acquisition	Pre-acquisition
GP	2.060	1.765
NP	1.873	3.962
OP	0.674	1.264
EPS	73.482	20.288
MPS (BSE)	-1.917	379.608
MPS (NSE)	-1.912	379.608

For Excel Crop, the GP value of the pre- and post-acquisition merger has been showcased as 1.765 and 2.060 for evaluating the positive factors of merger acquisition.

VI. CONCLUSION

Regarding the causes of merger and acquisition in the Indian Chemical sector, the chances can be taken into consideration that can impact the driving factors behind M&D. Companies might evaluate the competence of the market's well as the ROI prior to make any merger and acquisition decisions. It is significant that in India chemical industry is a very important economic parameter in terms of overall development. Companies could have analysed the benefits and take effectual decisions for the M&D initiatives. Research and development, in the case of Sumitomo is considered as a vital determinant of merger and acquisition in order to take impactful decisions. On the other hand, it includes the barriers of supply chain management. Being a chemical organisation, it needs to deal with different safety standards. In that case, any disruption in the supply chain management can significantly impact the social responsibilities of the organisations by interrupting customer safety. From the global business context, M&D includes different financial factors which can affect the merger and acquisition decisions. Exchange rate, fluctuation in the GDP and currencies might drive the merger and acquisition process. Also, it can help to break the language barriers and communicate with global customers by merging and acquiring foreign businesses.

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