



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## An Empirical Study On Ratio Analysis With Reference Suman And Co

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### Abstract

This empirical study conducts a comprehensive ratio analysis to evaluate the financial performance of Bosch Ltd over a five-year period, with reference to Suman and Co as a benchmark. The analysis covers liquidity ratios, profitability ratios, leverage ratios, and other key financial metrics to gain insights into Bosch's financial health and resilience. The findings reveal a nuanced picture of Bosch's performance, highlighting both strengths and areas for improvement.

One of the key findings of the study is a slight decline in Bosch's current ratio over the five-year period. This decline suggests potential liquidity challenges for the company, indicating a decreased ability to cover short-term liabilities with current assets. Such findings emphasize the importance of closely monitoring liquidity ratios to ensure the company's ability to meet its short-term obligations efficiently.

Moreover, significant fluctuations in Bosch's net profit ratio were observed during the study period. These fluctuations underscore the importance of closely monitoring profitability factors and implementing strategies to maintain or improve profitability levels. By understanding the drivers behind these fluctuations, Bosch can better manage its resources and operations to enhance overall profitability.

Additionally, the study identifies a decreasing trend in Bosch's quick ratio over the five-year period. The quick ratio, which excludes inventory from current assets, highlights the company's ability to meet short-term liabilities using its most liquid assets. The decreasing trend in this ratio underscores the need for Bosch to optimize its inventory management practices and implement effective liquidity strategies to maintain financial health.

Despite these challenges, Bosch maintains a generally healthy liquidity position and stable capital structure. The study acknowledges the company's resilience in navigating through financial challenges and highlights its ability to maintain financial stability over the years.

Based on the findings, the study proposes several recommendations for Bosch to enhance its financial performance and resilience. These recommendations include continued monitoring of financial metrics, targeted strategies to address weaknesses identified in the analysis, and leveraging strengths to capitalize on growth opportunities. Furthermore, benchmarking against industry standards, such as Suman and Co, is recommended to provide valuable insights for informed decision-making and strategic planning.

**Keywords:** Financial analysis, Ratio analysis, financial statements.

## INTRODUCTION ABOUT FINANCIAL STATEMENT

A financial statement is a systematic accounting method used to provide a snapshot of a company's financial situation. It aims to present data in a clear and logical manner for analysis. Financial statements are influenced by various factors, such as recorded facts, accounting policies, personal decisions, opinions, and conventions.

Recorded facts refer to the information documented in financial records, while accounting conventions involve the application of fundamental accounting principles. The 'conservatism' convention takes into account anticipated losses but disregards expected profits, ensuring a company's actual financial position may be more conservative than what is indicated in its income statement. Personal judgments can also significantly impact financial statements, such as the choice of depreciation method or the decision to amortize intangible assets.

In India, financial statements are prepared and presented in accordance with legal requirements, but some important information may not be disclosed. Financial statements are not customized to meet the specific requirements of individual users, making them incapable of meeting their unique information needs.

To analyse income statements, companies typically employ three categories of financial analysis techniques: cross-section, time series, and cross-section cum time series analysis. Cross-section comparison involves comparing the financial indicators of a related company to evaluate profitability, while time series analysis examines the relationships between different financial statements and draws

comparisons and conclusions. Cross-section cum time series analysis is the most effective way of evaluating financial accounts, and the income statement is used to assess the financial position.

## RATIO ANALYSIS

Ratio analysis is a method used by external analysts to evaluate a company's financial performance, including profitability, liquidity, and solvency. It involves analysing financial data from a company's financial statements, relying on current and previous statements to determine a company's financial situation. Ratios are mathematical connections between two related objects expressed in quantitative form. These connections can be described using proportion, frequency, or percentage. The sum of two things represented in the common denominator is in proportion. Ratios are expressed in times and turnover, and the quotient is obtained by dividing one element by another and multiplying by one hundred.

### OBJECTIVES

- Allows investors to invest in the company and make decisions to make successful investments.
- It is used to assess the company's success and to calculate its productivity.
- It is used to monitor the entire management distribution region.
- Pattern, revenue, lost profits, and other related information.

### Uses of Ratio Analysis:

### Comparison:

- Compares a company's financial performance with similar companies in the industry.
- Identifies market opportunities and assesses strengths and weaknesses.
- Utilized by management to enhance market position.

### Trend Analysis:

- Determines if financial performance is improving or declining over time.
- Helps in forecasting future financial outcomes.
- Identifies potential risks or opportunities.

**Operational Efficiency:**

- Evaluates effectiveness in managing assets and liabilities.
- Minimizes avoidable costs from inefficient asset use.
- Determines over or underutilization of financial resources.

**Types of Ratios:**

Current Ratio:  $\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$ .

- The current ratio is a financial metric used to evaluate a company's ability to meet short-term obligations.
- It's calculated by dividing current assets by current liabilities, indicating the company's liquidity position.
- A ratio above 1 suggests the company has more current assets than current liabilities, implying sufficient liquidity.
- Conversely, a ratio below 1 indicates potential liquidity issues, as current liabilities exceed current assets.

Equity Ratio:  $\text{Equity Ratio} = \text{Total Equity} / \text{Total Assets}$ .

- The equity ratio is a financial metric used to assess a company's financial health and risk management.
- It represents the proportion of total assets financed by shareholders' equity rather than debt.
- Calculated by dividing shareholders' equity by total assets, it indicates the extent to which a company relies on equity to fund its operations and growth.
- A higher equity ratio suggests a lower financial risk, as it implies less reliance on debt financing, while a lower ratio may indicate higher financial leverage and potential risk.

Quick Ratio:  $\text{Quick Ratio} = \frac{\text{Total Current Assets} - \text{Inventory}}{\text{Current Liability}}$ .

- Quick Ratio, also known as Acid-Test Ratio, is a financial metric used to evaluate a company's short-term liquidity.
- It measures a company's ability to meet its short-term obligations using its most liquid assets, excluding inventory.
- Quick Ratio is calculated by dividing the sum of cash, marketable securities, and accounts receivable by current liabilities.
- A higher Quick Ratio indicates stronger short-term liquidity and suggests a company can meet its obligations without relying heavily on inventory sales.

Net Profit Ratio:  $\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} * 100$ .

- Net Profit Ratio is a financial metric used to measure a company's profitability.
- It is calculated by dividing the net profit after taxes by the net sales revenue.

- This ratio indicates the portion of each dollar of revenue that translates into profit.
- A higher net profit ratio signifies better efficiency in generating profits from sales.

Debt to Equity Ratio:  $\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity Shareholders}}$ .

- The debt-to-equity ratio is a financial metric used to evaluate a company's leverage by comparing its total debt to its shareholders' equity.
- It's calculated by dividing total liabilities (debt) by shareholders' equity, often expressed as a percentage or decimal.
- A higher ratio indicates that a company relies more on debt financing, which can increase financial risk but also potentially amplify returns.
- Conversely, a lower ratio suggests a more conservative financial structure with less reliance on debt financing.

Debt to Asset Ratio:  $\text{Debt to Asset Ratio} = \frac{\text{Total Debt}}{\text{Total Asset}}$ .

- Debt to Asset Ratio is a financial metric used to assess the proportion of a company's assets financed by debt.
- It's calculated by dividing total debt by total assets, expressed as a percentage.
- A higher ratio indicates that a larger portion of the company's assets is funded by debt, which may imply higher financial risk.
- Conversely, a lower ratio suggests a healthier financial position with less reliance on borrowing.

### Theoretical Implication of Study

The theoretical implication of financial statement analysis is to provide valuable insights into a company's financial situation and future potential. This analysis aids investors, creditors, financial experts, and others in investing in financial instruments like stocks and bonds by evaluating a company's past, present, and future financial performance, profitability, and potential for return on investment through dividends and market appreciation of stock holdings. Financial ratios are used to evaluate a company's profitability with precision and greater understanding, acting as diagnostic tools that allow business analysts to examine the connections between different financial statement elements.

Financial ratios are commonly used to evaluate a company's financial performance, and they come in three main categories: balance sheet ratios, income statement ratios, and combined ratios. These ratios can be categorized into four types: liquidity ratios, leverage ratios, activity ratios, and profitability ratios. Liquidity ratios indicate a company's ability to meet short-term financial obligations, leverage ratios evaluate a company's funding structure in terms of borrowed funds, activity ratios measure the efficiency of asset management by company management, and profitability ratios compare profit to revenue, assets, and equity to evaluate a company's overall operational success.

In conclusion, financial ratios play a crucial role in assessing a company's financial situation and future potential, but analysts must exercise good judgement when applying analytical techniques to assess a company's financial position, performance, and potential for the future.

## Chapter -02

### Findings on Various Research Papers Using Financial Ratio Analysis

#### 1. Application of Factor Analysis on Financial Ratios (2011):

- ❖ Analysed 44 financial ratios of 130 Indian cement companies over 10 years.
- ❖ Identified eight underlying categories: earnings, liquidity, solvency, profitability, dividend policy, assets management, efficiency, and working capital.
- ❖ Utilized multiple regression and cluster analysis for validation.

#### 2. Efficiency and Profitability of Bank Regions (2004):

- ❖ Used Data Envelopment Analysis (DEA) to evaluate performance of ten regional offices of a South African bank.
- ❖ Improving profitability ratios and allocative efficiency is crucial for optimal input mix.
- ❖ Scale efficiency correlates with conventional ratios.

#### 3. Financial Ratios as Predictors of Bankruptcy in Japan (No Date):

- ❖ Developed a universal model predicting bankruptcy in Japan with over 86.14% accuracy.
- ❖ Model excludes profitability and liquidity ratios.

#### 4. Small Enterprise Default Prediction Modelling (2008):

- ❖ Analysed manufacturing firms in Central and Northern Italy to create default prediction models for small enterprises.
- ❖ Economic-financial ratios were effective tools with high accuracy rates.

### 5. Nexus of Poverty, GDP Growth, Dependency Ratio, and Employment (2013):

- ❖ Explored relationship in developing countries; age dependency ratio significantly impacts poverty.
- ❖ Suggested stable economic growth with increased labour productivity for poverty reduction.

### 6. Determinants of Capital Adequacy Ratio in Egyptian Banks (2015):

- ❖ Liquidity, size, and management quality are significant variables for CAR before and after international financial crises.
- ❖ Profitability only affects CAR through return on assets.

### 7. Cash Conversion Cycle of Small Business Firms (1993):

- ❖ Examined liquidity measures and their implications for profitability in small businesses.
- ❖ Cash conversion cycle negatively correlated with current ratio and inventory conversion period.

### 8. Relationship between Financial Efficiency Ratios and Stock Prices (2015):

- ❖ Explored correlation between efficiency ratios and stock prices in insurance companies listed in Borsa Istanbul.
- ❖ Profitability ratios emerged as the best fit model.

### 9. Financial Performance of ICICI Bank - A Comparative Analysis (2014):

- ❖ Suggested measures to maintain financial performance including current ratio, controlling NPAs, and leverage.

### 10. Insurance Sector Analysis in Turkey (2017):

- ❖ Analysed profitability ratios and turnover in Turkey's insurance sector.
- ❖ Life insurance companies generally had positive profitability ratios.

## Research Gap

The research gap identified from the summary of papers on financial ratio analysis is the lack of comprehensive studies that integrate various methodological approaches and examine their effectiveness across different sectors and regions. Specifically:

### 1. Integration of Methodological Approaches:

Many studies focus on specific methodologies such as factor analysis, discriminant analysis, or regression analysis in isolation. There's a gap in research that integrates multiple methodologies to provide a more holistic understanding of financial ratio analysis and its implications.

## 2. Sector and Regional Variations:

Existing research predominantly focuses on specific industries or regions, limiting the generalizability of findings. There's a gap in comprehensive studies that examine financial ratio analysis across diverse sectors and regions to identify common patterns and unique variations.

## 3. Emerging Trends and Technologies:

With the advancement of technology and availability of big data analytics, there's a gap in research that explores the integration of emerging technologies like machine learning and artificial intelligence in financial ratio analysis for enhanced prediction and decision-making.

## 4. Longitudinal Studies:

Many studies provide insights based on cross-sectional data or short-term analyses. There's a gap in longitudinal studies that track financial ratio trends over an extended period to assess long-term performance and identify dynamic patterns.

## 5. Comparative Analysis:

While some studies compare financial ratios across companies or industries, there's a gap in comparative analysis that extends beyond traditional financial metrics to include non-financial factors such as environmental, social, and governance (ESG) criteria, providing a comprehensive evaluation of performance.

## 6. Practical Implications and Implementation:

Existing research often focuses on theoretical frameworks and analytical techniques, with limited emphasis on practical implications and implementation strategies for stakeholders such as investors, managers, and policymakers. There's a gap in research that bridges the gap between theory and practice, offering actionable insights for decision-makers.

Addressing these research gaps would contribute to advancing the understanding and application of financial ratio analysis in various contexts, fostering informed decision-making and improving financial performance evaluation methodologies.



Sl. No	Title of the paper	Name of the journal	Author	Year of Publication	Issue / Volume	Page No.	Brief of the paper (60 to 80 words)	Takeaway (30 to 50 words)
1	Application of the Factor Analysis on the Financial Ratios and Validation of the Results by the Cluster Analysis: An Empirical Study on the Indian Cement Industry	Journal of Business Studies Quarterly	Anupam De, Gautam Bandyopadhy, B.N. Chakraborty	2011	ISSN 2152-1034/Vol. 2	19	This study uses Factor Analysis to analyse audited financial data of selected cement companies in India over a 10-year period. The analysis identifies 8 underlying categories (factors) based on empirical evidence. The study excludes variables with low inter-correlation and conducts multiple regression analysis on the remaining 25 variables. The results are validated through cluster analysis, where representative ratios are identified for each factor.	The study analysed 44 financial ratios of 130 Indian cement companies over 10 years, identifying eight underlying categories: earnings and profitability, liquidity, cash balance, long-term solvency, capital structure, profitability, dividend policy, assets management, operating efficiency, and working capital productivity.

2	An empirical study on measuring efficiency and profitability of bank regions	Journal of the school if accounting of sciences	M Oberholzer, G van der Westhuizen.	2004	Issu 1: volume 12.	14	Bank managers often compare their bank's return on equity or return on assets to their peers, identifying high-performance banks based on these ratios. However, this approach relies on comparable ratios, making it difficult to find suitable standards. Data Envelopment Analysis (DEA) is a tool that can compensate for these weaknesses, evaluating the performance of ten regional offices of a South African bank.	Bank regions' performance should be evaluated using conventional financial statement analysis and DEA. Improving profitability ratios and allocative efficiency is crucial for optimal input mix. Scale efficiency, a DEA measurement, correlates with conventional ratios, ensuring optimal operations.
3	Financial Ratios as Predictors of Bankruptcy in Japan: An Empirical Research	-	Cindy Yoshiko Shirata	-	-	18	The Japanese economy has been struggling since the 1990 bubble burst, leading to financial difficulties for many companies. A prediction model is needed to assess these firms' financial distress. This study	This paper presents a more accurate model for predicting bankruptcy in Japan firms, excluding profitability and liquidity ratios, and showing that these factors do

							<p>presents empirical results on financial ratios as predictors of Japanese corporate failure, demonstrating that a universal model can predict bankruptcy with over 86.14% accuracy, regardless of industry or size. This model is independent of sample size.</p>	<p>not reveal financial distress.</p>
4	<p>Using Economic-Financial Ratios for Small Enterprise Default Prediction Modelling: An Empirical Analysis</p>	<p>Oxford Business &amp; Economics Conference Program</p>	<p>Prof. Francesco Ciampi, Niccolò Gordin</p>	<p>2008</p>	<p>ISBN: 978-0-9742114-7-3</p>	<p>21</p>	<p>Previous research on company default prediction statistical modelling has shown effectiveness in using economic-financial ratios for small enterprises (SEs). This study focuses on small manufacturing firms in Northern and Central Italy, revealing that discriminant analysis and logistic regression are effective tools for designing SEs default prediction models. The models gain</p>	<p>The study manufacturing firms in Central and Northern Italy to create prediction models for SE default. Results showed economic-financial ratios were effective tools, with high accuracy rates. The study emphasizes the need for diverse models.</p>

							accuracy when constructed for separate business sectors and company size groups.	
5	An Empirical Study on the Nexus of Poverty, GDP Growth, Dependency Ratio and Employment in Developing Countries	Journal of Competitiveness	Vijayakumar, S.	2013	Vol. 5, Issue 2	16	This study examines the relationship between poverty, economic growth, employment, and dependency ratio in developing countries. It uses cross-country data from 41 countries in Asia, Latin America, and Sub-Saharan Africa. The results show that age dependency ratio significantly impacts poverty, while industrial employment has a negative association. The study suggests stable economic growth with increased labour productivity and labour-intensive technology as an active solution to poverty.	The paper examines the relationship between poverty, economic growth, employment, and dependency ratio in developing countries like Asia, Africa, and Latin America. It reveals that age dependency ratio significantly impacts poverty and has a positive association with poverty. The study suggests policymakers focus on population control and active population generation.

6	DETERMINANTS OF CAPITAL ADEQUACY RATIO: AN EMPIRICAL STUDY ON EGYPTIAN BANKS	Corporate Ownership & Control	Osama A. El-Ansary*, Hassan M. Hafez	2015	Volume 13, Issue 1	11	This paper examines the factors influencing capital adequacy ratio (CAR) in Egyptian commercial banks from 2004-2013. The study covers 36 banks and examines the relationship between CAR and independent variables like earning assets ratio, profitability, liquidity, loan loss provision, net interest margin growth, size, loans assets ratio, and deposits assets ratio. Results show that liquidity, size, and management quality are the most significant variables for CAR before and after international financial crises.	The paper examines the capital adequacy ratio in Egyptian commercial banks, revealing that profitability doesn't affect it except for return on assets. Asset quality negatively correlates with the ratio, suggesting further research is needed.
7	An Empirical Investigation of the Cash Conversion Cycle of Small Business Firms	JOURNAL OF SMALL BUSINESS FINANCE	Lyroudi, Katerina; McCarty, Dan	1993	Vol. 2, Is. 2	24	The purpose of this study is to examine the cash conversion cycle as an indicator of the company's liquidity, to	The study examines liquidity measures, current and quick ratios, and cash conversion cycle in

							determine the relationship of the cash conversion cycle with the current and the quick ratios and with its component variables, and to investigate the implications of the cash conversion cycle for small businesses in terms of profitability and firm size.	small businesses. It reveals that sales and working capital variables can impact liquidity and profitability ratios, with cash conversion cycle negatively correlated with current ratio and inventory conversion period.
8	THE RELATIONSHIP BETWEEN FINANCIAL EFFICIENCY RATIOS AND STOCK PRICES: AN EMPIRICAL INVESTIGATION ON INSURANCE COMPANIES LISTED IN BORSA ISTANBUL		Rafet AKTAŞ* Seyfettin ÜNAL	2015	16	This study examines the relationship between financial efficiency ratios and stock prices of publicly traded insurance firms in Borsa Istanbul. The study uses three sets of efficiency ratios - cost, revenue, and profit efficiency - as proxy and runs a regression analysis against stock prices. The results show statistically significant relationships between the ratios	The study explores the correlation between stock prices and efficiency of insurance companies in Borsa Istanbul, revealing a significant relationship between efficiency ratios and stock prices, aiding in improving efficiency and investor insights.	

							and stock prices, with profitability ratios emerging as the best fit model. The findings have significant implications for insurance firms and investors.	
9	AN EMPIRICAL STUDY OF FINANCIAL PERFORMANCE OF ICICI BANK- A COMPARATIVE ANALYSIS	Journal of Business Studies (JBS_)	Ms. Shikha Gupta	2014	Vol. 1, Issue 1	13	Financial performance is crucial for effective decision-making in the banking sector, especially in India. The Industrial Credit and Investment Corporation of India (ICICI) Bank, the second largest bank in India, is deeply involved in human and economic development. The bank offers a wide range of banking products and services, including investment banking, asset management, venture capital, and insurance. This research paper aims	ICICI bank must maintain current ratio and Quick ratio, control NPAs over 1%, control leverage to increase DP ratio, and control spread to avoid long-term income loss from interest expenses, while maintaining long-standing earnings per share.

							to analyse and compare the financial performance of ICICI Bank, focusing on operational control, profitability, and solvency, and offer suggestions for improving efficiency.	
10	Insurance Sector Analysis in Turkey: An Empirical Study	European Journal of Economics and Business Studie	Hasan Metin, PhD Gjylbehare Llapi, MSc Armend Muja, MSc	2017	Volume 3, Issue 3	14	This study examines the relationship between employee turnover in insurance companies in Turkey and three independent variables: the ratio of staff with a Bachelor's degree, the ratio of sales department crew, and the ratio of male salespeople. Results show that the ratio of male salespeople negatively affects average turnover, while the ratio of BA degree staff positively affects it. The study also provides a summary of insurance and risk	The study explores insurance and risk concepts, historical background, profitability ratios, and turnover in Turkey's insurance sector. It finds that life insurance companies generally have positive profitability ratios, while elementary insurance companies have fluctuating profits.



							concepts and analyses profitability ratios for the last decade.	
11	Measurement of Financial Soundness of Life Insurance Companies in Bangladesh: An Empirical Study	A Journal of Business Administration Discipline	Dr. Razu Ahmed <sup>1</sup> and Dr. Shakhawat Hossain Sarkar <sup>2</sup>	2019	Volume: 14	15	The study measures the financial soundness of life insurance companies in Bangladesh using CAMELS ratio analysis and multiple discriminate analysis. Results show a decreasing trend in the capital adequacy ratio, reinsurance participation, and expense ratios exceeding the Insurance Development and Regulatory Authority standard. All selected companies hold more liquid assets than necessary, and Z scores indicate a potentially unhealthy financial health. This study is the first of its kind in Bangladesh, focusing on the financial health of life	The study reveals that expense ratio, claims ratio, and liquidity ratio significantly impact the financial soundness of insurance companies in Bangladesh. To improve management, strategic steps like cost reduction, HRD programs, and risk assessment should be implemented. Future research should measure performance and customer satisfaction.

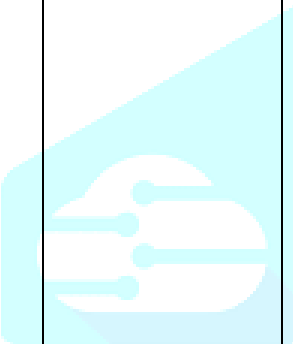
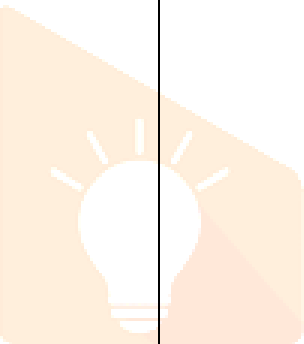
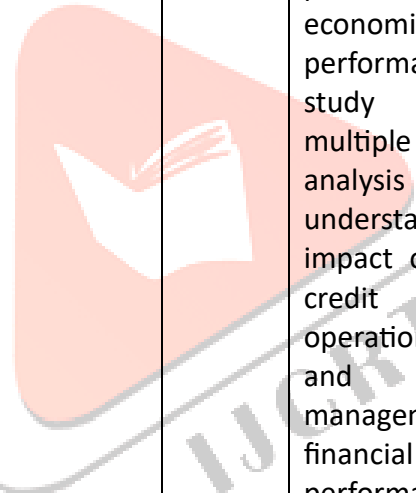
							insurance companies.	
12	Effects of Financial Ratios in Early Warning System and Macro - Economic to Stock Returns (Empirical Study at Insurance Companies at Indonesia Stock Exchange 2014 – 2018)	-	Hartiny Pop Koapaha	2022	-	11	This research examines the effects of financial ratios in Early Warning Systems (CSR) on insurance company stock returns from 2014-2018 in the Indonesia Stock Exchange. The study used a descriptive-analytical method and secondary data, including financial statements and SBI rate. Results showed that incurred claims liability ratio negatively affects stock returns, liquidity ratio positively affects returns, and SBI rate positively affects returns. The study highlights the significant impact of these ratios on insurance company stock returns.	The research shows that the claim expense ratio has no effect on stock returns, while liquidity ratio affects stock returns by 8.36% and SBI interest rates by 3.52%, with 88.22% influenced by other factors.

13	The Effect of Financial Ratio in Determining Company Value: (Empirical Study on Banking Companies Listed on the Indonesia Stock Exchange for the 2015-2019 Period)	BIRCI-Journal	Wulan Mawarti, Dumas Angga Negoro	2022	Volume 5	13	<p>This study investigates the effect of financial ratios on the firm value of 49 banking companies listed on the Indonesia Stock Exchange between 2015 and 2019. The research found that ROE, Firm Size, and CAR ratios positively affect firm value, while LDR and NPL ratios negatively affect it. The study suggests that non-financial ratios can help companies meet short-term obligations, particularly in strategic decision-making involving investment, profitability, and capital. However, limitations include the research data and time span, and suggestions for future research include longer research</p>	<p>The research on financial ratios in Indonesian banking companies found that ROE has a positive, partially significant effect on firm value. Loan Deposit Ratio has a negative, partially significant effect. Capital adequacy ratio has a strong positive impact on firm value. Non-Performing Loan (NPL) has a negative, partially significant effect on company value.</p>
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							periods for optimal data accuracy.	
14	Determinants Of Non-Life Insurance Companies Profitability: An Empirical Study in India	International Journal of Innovative Research and Advanced Studies (IJIRAS)	Wondwossen Jerene Daare	2016	Volume 3 Issue 13	6	The main objective of this study was to identify factors that determining non-life insurance companies` profitability in India. To achieve the objective financial report of eight general insurance companies (2 public and 6 private companies) collected from the year 2006 to 2016. Though the author tasted eight variables, company size, liquidity and inflation found statistically significant factors that determine insurance companies` profitability in India. The study recommended insurance mangers may put significant attention on managing current assets and current	Insurance companies in India earn an average 8.47 cents per rupee of asset investment. Factors like size, capital adequacy, age, and GDP positively impact insurance profitability, while capital adequacy, premium growth, and inflation negatively affect it. Inflation is a significant macroeconomic variable in Indian non-life insurance.

							liability to maintain optimal liquidity position while inflation also important from external variables.	
15	The Relationship between the ROA, ROE and ROI Ratios with Jordanian Insurance Public Companies Market Share Prices	International Journal of Humanities and Social Science	Dr. Majed Abdel Majid Kabajeh	2012	Vol. 2	6	This study investigates the correlation between ROA, ROE, and ROI ratios with Jordanian insurance public companies share prices from 2002-2007. Results show a positive relationship between these ratios and share prices, with a low relationship between ROA and ROI ratios separately. However, no relationship was found between ROE ratio and market share prices for Jordanian insurance public companies. The study provides empirical evidence for these relationships.	The study found a strong positive relationship between ROA, ROE, and ROI ratios with share prices of Jordanian insurance public companies, with no significant relationship between ROA and ROI.

16	An empirical study of the usefulness of accounting ratios to describe levels of insolvency risk	Journal of Banking & Finance	Mervyn & Lincoln	June 1984	Volume 8, Issue 2	Pages 321-340	This study investigates the use of accounting ratios to measure insolvency risk. Unlike previous studies, it uses discriminant analysis to select ratios without arbitrary limits, analyses four industries separately (manufacturing, retail, property, and finance) and uses the statistical probabilities to measure a firm's current level of insolvency risk. The study concludes by interpreting insolvency risk patterns and analysing factors causing differences, providing insights into the causes, symptoms, and remedies of financial distress.	This study uses discriminant analysis to measure insolvency risk in four industries, analysing accounting ratios and statistical probabilities. It provides insights into causes, symptoms, and remedies of financial distress.
17	An Evaluation of Financial Performance of	Journal of Business	Rashed Al Karim, Tamima Alam	2013	Volume 5, Number 2	13	This study measures the financial performance of five	The study evaluates the financial

	<p>Private Commercial Banks in Bangladesh: Ratio Analysis</p>	<p>Studies Quarterly</p>				<p>private sector banks in Bangladesh, listed on the Dhaka Stock Exchange and Chittagong Stock Exchange. The indicators used include internal-based performance, market-based performance, and economic-based performance. The study employs multiple regression analysis to understand the impact of bank size, credit risk, operational efficiency, and asset management on financial performance. The hypothesis suggests that these factors significantly impact the financial performance of Bangladeshi commercial banks.</p>	<p>performance of five Bangladeshi private sector banks, analysing internal-based, market-based, and economic-based indicators, and reveals that factors such as bank size, credit risk, operational efficiency, and asset management significantly impact performance.</p>
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18	Analysing Foreign Financial Statements: The Use and Misuse of International Ratio Analysis	Journal of International Business Studies	Frederick D. S. Choi, Hisaaki Hino	1983	Volume 14	pages 113–131	This paper analyses the misuse of financial ratios in foreign companies, focusing on Japan and Korea as examples. It explains that these ratios are often misinterpreted due to differences in international accounting principles and the lack of understanding of the specific foreign environment that influences these ratios. The aim is to raise awareness among investors, security analysts, and business researchers.	The paper examines the misuse of financial ratios in foreign companies, focusing on Japan and Korea, and highlights the misinterpretation due to differences in accounting principles and lack of understanding of the foreign environment.
19	Ratio Analysis and Equity Valuation: From Research to Practice	Review of Accounting Studies	Doron Nissim & Stephen H. Penman	2001	Volume 6	pages 109–154	This paper presents a financial statement analysis for equity valuation, incorporating standard profitability analysis, growth analysis, operating activities, and financing activities. The analysis is	This paper presents a hierarchical financial statement analysis for equity valuation, incorporating profitability, growth, operating, and financing

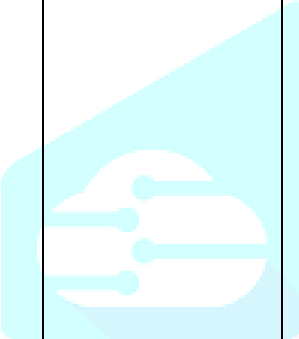
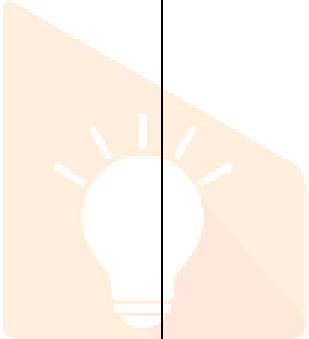


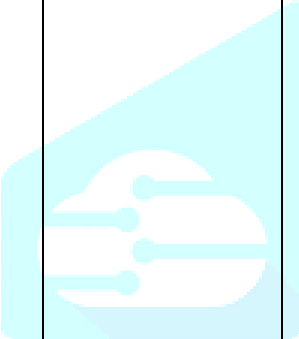
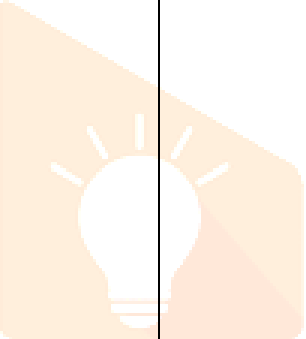
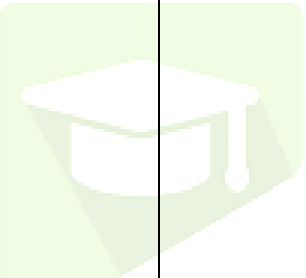
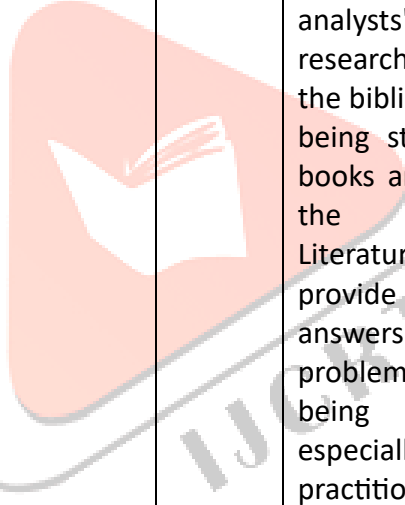
							hierarchical, with current ratios as predictors of future ratios determining equity payoffs. The analysis is historical, documenting typical values for ratios from 1963-1999 and their time series behaviour. The perspective is aimed at forecasting payoffs to equities.	activities, aiming to forecast equity payoffs from 1963-1999.
20	Ratio Analysis Using Rank Transformation	Review of Quantitative Finance and Accounting	Gregory Kane & Nancy Meade	1998	Volume 10	pages 59–74	The paper proposes a method for transforming financial ratios into a uniform distribution with boundaries between 0 and 1, which addresses methodological issues like constrained regression models, ratio outliers, negative ratios, and non-normal distributions. The study empirically tests scaled rank transformations with stock returns, finding	The study addresses methodological issues like negative ratios and ratio outliers by transforming financial ratios into a uniform distribution, demonstrating relative ranked accounting ratios have more explanatory and predictive power.

							that relative ranked accounting ratios have more explanatory and predictive power than untransformed, log-transformed, and square-foot transformed ratios.	
21	A financial Ratio Analysis of Commercial Bank Performance in South Africa	African Review of Economics and Finance	M Kumbirai R Webb	2010	Vol. 2 No. 1	24	The paper examines the performance of South Africa's commercial banking sector from 2005-2009 using financial ratios to measure profitability, liquidity, and credit quality. It found that overall bank performance increased in the first two years, but the global financial crisis in 2007 led to falling profitability, low liquidity, and deteriorating credit quality in the sector, reaching its peak during 2008-2009.	The paper analyses South Africa's commercial banking sector's performance from 2005-2009, revealing an initial increase in performance. However, the 2007 global financial crisis led to declining profitability, low liquidity, and deteriorating credit quality, peaking in 2008-2009.
22	A FINANCIAL RATIO ANALYSIS OF KRISHAK	International Journal of Marketing,	PROF. VIJAY S PATEL; PROF.	October 2012	Vol.1 Issue 10	14	The Financial Statements are generally prepared	This paper provides guidelines for

	BHARATI COOPERATIVE LIMITED	Financial Services & Management Research	CHANDRESH B. MEHTA				for the measurement of financial position of a particular company for a particular period of time. The financial statements i.e. (i) Profit and loss account and (ii) Balance sheet provide useful information regarding financial situation of company. The information has its own value, but if someone wants to have better judgment of the concern, he has to analyse them. This paper provides the guidelines about analysis of profitability ratio of Krishak Bharati Co-operative Ltd. located at Kawas-Hazira in Surat District.	analysing the profitability ratio of Krishak Bharati Co-operative Ltd. in Surat District, focusing on the profit and loss account and balance sheet, which provide valuable information for better decision-making.
23	FINANCIAL RATIO ANALYSIS OF THE ELECTRIC POWER INDUSTRY	Asia-Pacific Journal of Operational Research	TOSHIYUKI SUEYOSHI	2005	Vol. 22, No. 03	pp. 349-376	The American power/energy industry's financial performance is examined using a new approach called Financial Ratio	The study compares American power/energy industry's financial performance using Financial Ratio

							Analysis. The study compares the financial performance of 147 non-default firms with 24 default firms, revealing that leverage and profitability are crucial factors in avoiding corporate distress or bankruptcy. The results are also applied to the international comparison of Japanese electric power firms, indicating that while they have adequate managerial and financial capabilities, they perform barely above the American standard.	Analysis, revealing leverage and profitability are key to avoiding corporate distress or bankruptcy. Japanese firms perform below the American standard.
24	Financial Statement Fraud: A Case Examination Using Beneish Model and Ratio Analysis	International Journal of Trade, Economics and Finance	Normah Omar, Ridzuan Kunji Koya	April 2014	Vol. 5, No. 2	03	Fraud is a significant concern for organizations worldwide, and governments and regulators are emphasizing management's	This paper discusses fraud detection using Beneish Model and Ratios Analysis, emphasizing the importance of

							responsibility for effective fraud management programs. This paper discusses a local case and uses Beneish Model and Ratios Analysis as detection tools. These techniques can benefit auditors and professionals in detecting financial statement fraud. Legal implications and their uses are also discussed. The paper highlights the importance of human involvement in organizations and the need for effective fraud management programs.	human involvement in organizations and the legal implications of such techniques for auditors and professionals.
25	Financial Ratio Analysis of Firms: A Tool for Decision Making	International Journal of Management Sciences	Y. A. Babalola, F. R. Abiola	2013	Vol. 1, No. 4	132-137	Financial analysis is a specialty in accounting that aimed at formulating a diagnosis and a prognosis relative to the situation and the financial performance of a company or an	This article explores the relationship between financial analysis and accounting, highlighting the crucial role accounting plays in

						<p>organization. This article is to present primarily the relationship between financial analysis and accounting, and the fundamental role which accounting holds, through the information it produces, into analysts' work. The research method is the bibliographic one, being studied timely books and articles of the domain. Literature does not provide concrete answers to this problem, resolutions being expected especially from practitioners.</p>	<p>analysts' work. It uses bibliographic research to study relevant books and articles, expecting practical solutions from practitioners.</p>
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## Chapter -04

### RESEARCH DESIGN

#### STATEMENT OF THE PROBLEM

The problem for ratio analysis is to effectively evaluate and interpret financial performance using ratios, despite its limitations. Issues include selecting appropriate ratios, comparability across industries and regions, and the dynamic nature of financial data. Historical financial information may limit predictive power in uncertain economic environments, and variations in accounting standards can distort interpretations. Additionally, ratios cannot capture qualitative aspects of business operations, making comprehensive financial analysis challenging. Addressing these challenges is crucial to enhance the reliability and utility of ratio analysis as a tool for evaluating financial health and making informed decisions.

#### Scope of the Study

- ✓ The study encompasses an examination of various financial ratios used in analysing the performance of companies across different industries.
- ✓ It includes an exploration of methodological approaches such as factor analysis, discriminant analysis, and regression analysis.
- ✓ The scope extends to analysing trends and patterns in financial ratios over time to assess long-term performance.
- ✓ Comparative analysis across sectors and regions is considered to identify commonalities and unique variations. -

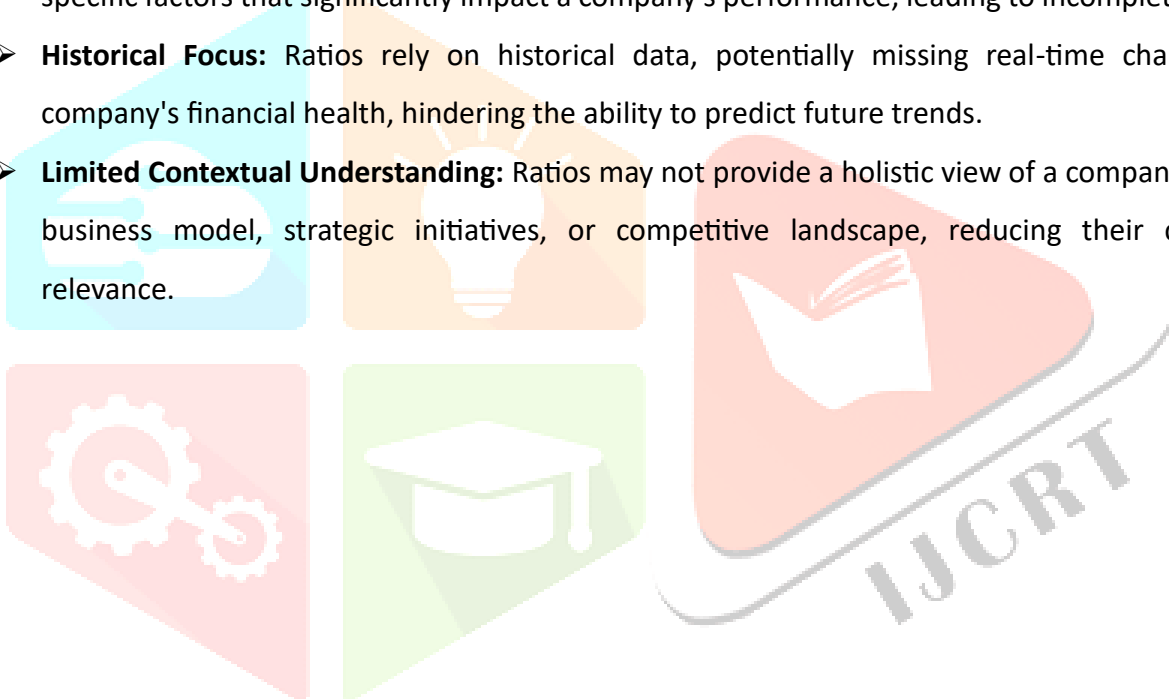
#### Objective of study

- **Evaluate Financial Performance:** Assess the financial performance of Suman & Co. through ratio analysis to understand its profitability, liquidity, solvency, and efficiency.
- **Compare with Industry Benchmarks:** Compare the ratios of Suman & Co. with industry benchmarks or competitors to identify its relative strengths and weaknesses in financial management and performance.
- **Identify Trends and Patterns:** Analyze historical trends and patterns in Suman & Co.'s financial ratios to identify any consistent patterns or changes over time, which could provide insights into the company's financial health and management effectiveness.

- **Provide Recommendations:** Based on the findings, provide recommendations to Suman & Co. on potential areas for improvement in financial management practices, strategic decision-making, and operational efficiency to enhance its overall financial performance and competitiveness in the market.

#### Limitations of Ratio Analysis:

- **Data Quality:** Reliability of ratio analysis heavily depends on the accuracy and consistency of financial data, and discrepancies or errors can distort results.
- **Lack of Industry Standards:** Variations in industry norms and accounting practices make it challenging to establish universal benchmarks for comparison, limiting the effectiveness of ratio analysis.
- **Ignoring External Factors:** Ratio analysis may overlook external economic, political, or industry-specific factors that significantly impact a company's performance, leading to incomplete insights.
- **Historical Focus:** Ratios rely on historical data, potentially missing real-time changes in a company's financial health, hindering the ability to predict future trends.
- **Limited Contextual Understanding:** Ratios may not provide a holistic view of a company's unique business model, strategic initiatives, or competitive landscape, reducing their contextual relevance.



#### RESEARCH METHODOLOGY

In this section, the data collection and analysis methods used in the study are described. The sources of data, analysis techniques, research duration, variables used in the analysis, and research limitations are outlined. The study is classified as descriptive because of the need to obtain accurate and empirical findings when analysing secondary data. The statistical data is presented using MS Excel and SPSS software.

#### RESEARCH DESIGN

The proposed research design outlines alternative research methods and addresses specific issues that arise during the review process. The use of econometric analysis enables the examination of the impact of various variables. The study is descriptive in nature, which is appropriate for effectively inferring



conclusions from the analysis of secondary data. The efficient analysis and evaluation of secondary data is logically descriptive.

### SAMPLING TECHNIQUE

The research in question employed a non-probability sampling technique, specifically the convenience sampling method. The reason for choosing this method was due to limitations in time and information about the population under study, which made it difficult to collect data through other sampling techniques.

### DATA COLLECTION METHOD

The analysis in this study was based on secondary data that was already available and previously published. The data was collected from various sources, including textbooks, journals, and online resources. The primary data source for the study was the annual reports and financial performance data of Bosch Ltd, specifically for the years 2018 to 2022. Additionally, the study also considered the company's share price data for the same five-year period.

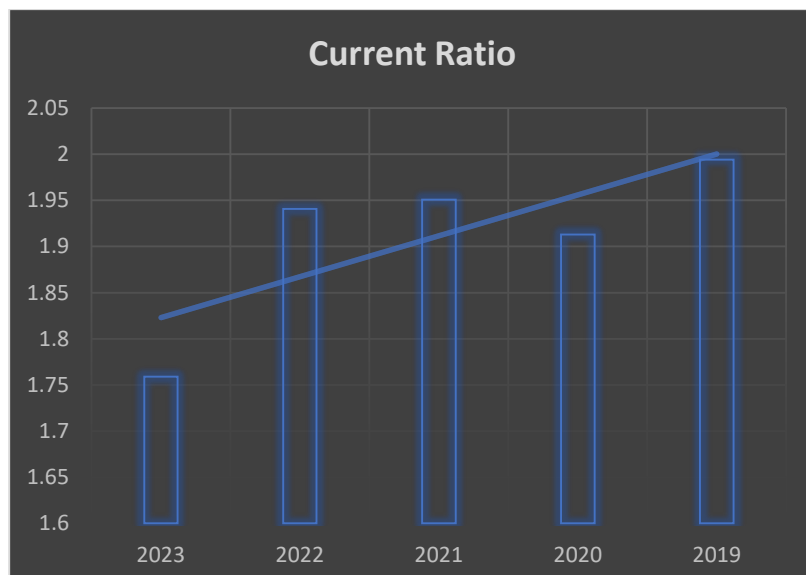
### PERIOD OF STUDY

The study has incorporated data from various sources, including annual reports and other records obtained from 2018 to 2022, as a crucial component of the research.

### Chapter -05

### Data Analysis & Interpretation

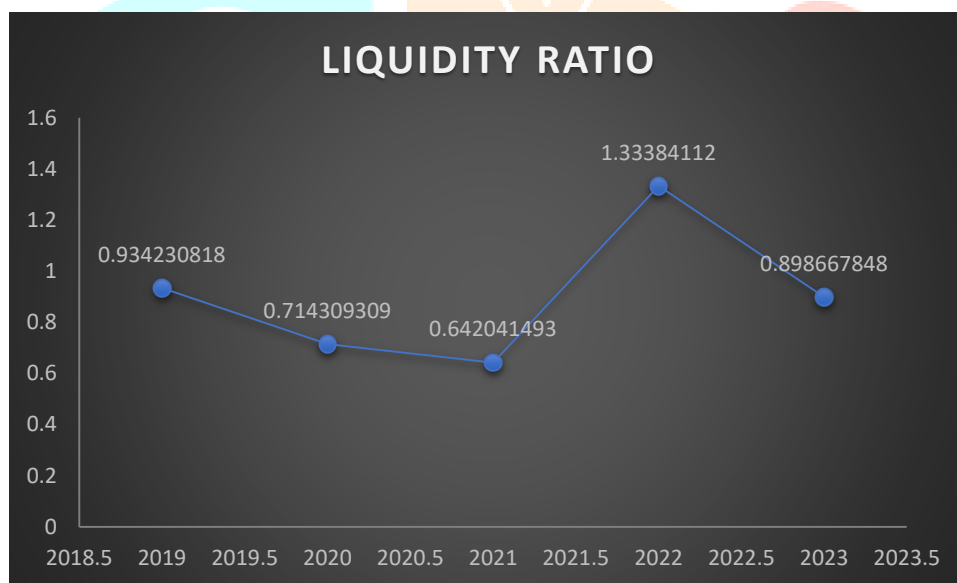
### RESULTS OF ANALYSIS AND INTERPRETATION TABLE



Current Ratio=Current Assets / Current Liabilities	Column1
2023	1.758952921
2022	1.94072973
2021	1.950666756
2020	1.913109839
2019	1.9940887

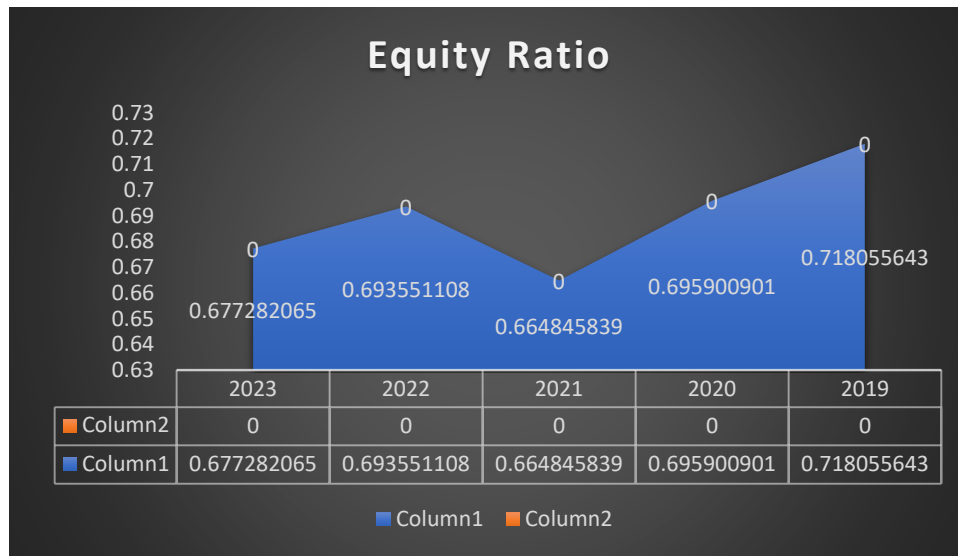
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The current ratio trend from 2019 to 2023 reveals a decline, signaling potential liquidity challenges. Although remaining above 1, indicating adequate liquidity, management should vigilantly address underlying factors driving this trend to fortify the company's financial resilience. Benchmarking against industry standards can offer valuable insights for strategic decision-making.



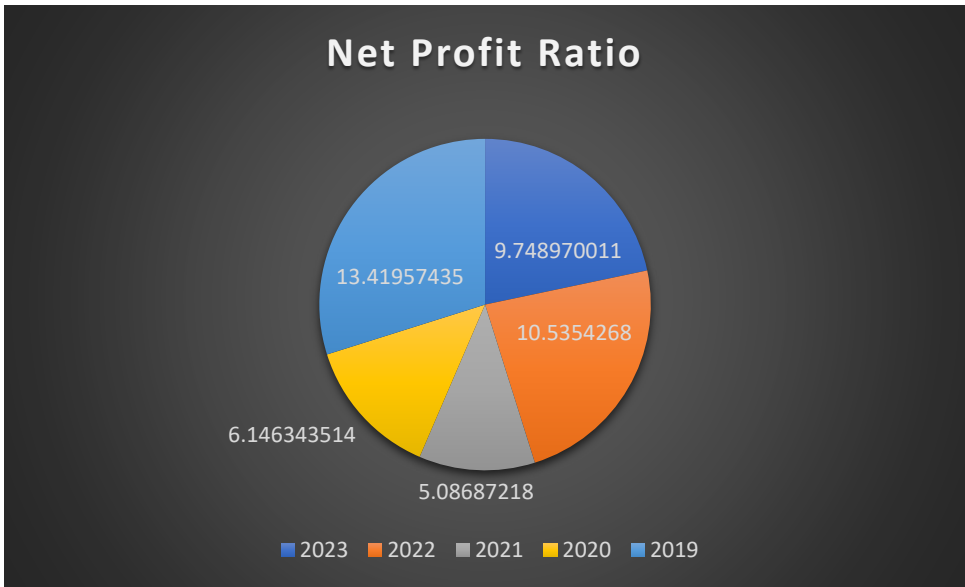
Liquidity Ratio = Total Sales / Total Assets	Column1
2023	0.898667848
2022	1.33384112
2021	0.642041493
2020	0.714309309
2019	0.934230818

The liquidity ratio trend exhibits fluctuations, notably declining in 2021 before showing modest variations in subsequent years. These shifts may signal challenges in optimizing asset utilization and sales efficiency. Management is advised to conduct a thorough analysis to identify underlying factors driving these fluctuations and implement targeted strategies to enhance both asset productivity and sales performance. Benchmarking against industry standards can offer valuable insights to inform strategic decision-making and improve overall competitiveness.



Equity Ratio=Total Equity / Total Assets	Column1
2023	0.677282065
2022	0.693551108
2021	0.664845839
2020	0.695900901
2019	0.718055643

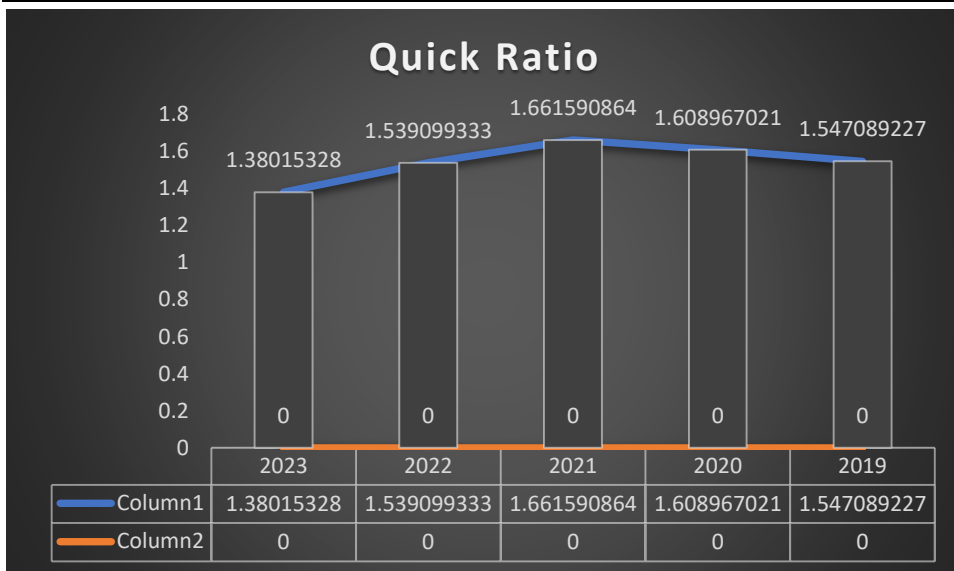
The equity ratio measures the proportion of a company's assets financed by equity rather than debt. The decreasing trend from 2019 to 2023 indicates a potential shift towards higher reliance on debt financing or a decrease in shareholder equity relative to total assets. This trend may signal changes in the company's capital structure or financial risk profile over the years. Further analysis of the company's financial health and strategic decisions is warranted to understand the implications of this trend effectively.



Year	Net Profit Ratio
2023	9.748970011
2022	10.5354268
2021	5.08687218
2020	6.146343514
2019	13.41957435

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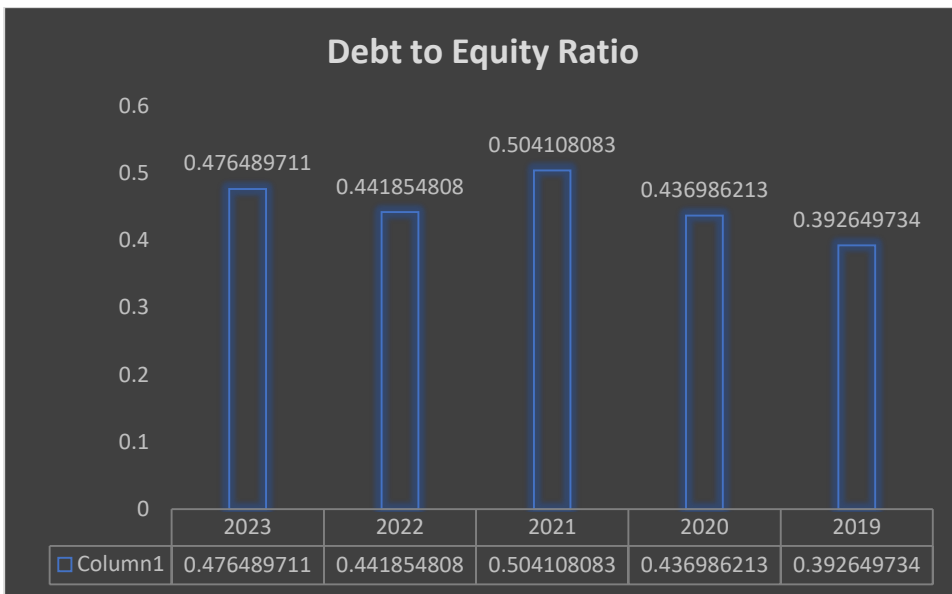
The net profit ratio reflects the percentage of net profit generated from net sales, serving as a key indicator of a company's profitability. The fluctuating trend observed from 2019 to 2023 suggests variations in the efficiency of cost management, revenue generation, or both over the years. A notable decline in 2021 followed by a gradual recovery implies potential challenges faced by the company, possibly requiring strategic adjustments to enhance profitability. Further analysis of operational and market factors is essential to discern underlying reasons behind the observed fluctuations.



Quick ratio=Total Current Asse <sup>t</sup> e-Inven <sup>t</sup> ry / Current Liability	Column1
2023	1.38015328
2022	1.539099333
2021	1.661590864
2020	1.608967021
2019	1.547089227

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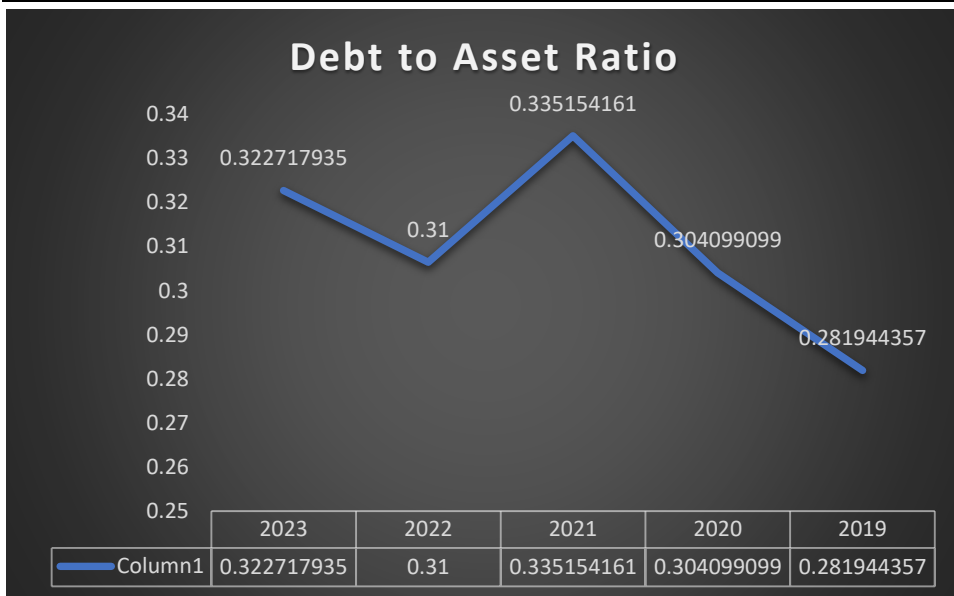
The trend of the quick ratio over the past five years indicates a slight decline, suggesting a potential decrease in the company's ability to meet its short-term obligations with its most liquid assets excluding inventory. Although the ratio remains above 1.0, indicating that the company can cover its current liabilities, the decreasing trend warrants further examination of inventory management and liquidity strategies to maintain financial health. It's crucial for stakeholders to monitor this trend closely to ensure the company's ability to navigate short-term financial obligations effectively and sustainably.



Debt to Equity Ratio=Total Debt / Total Equity Shareholders	Column1
2023	0.476489711
2022	0.441854808
2021	0.504108083
2020	0.436986213
2019	0.392649734

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The debt-to-equity ratio has shown a fluctuating trend over the past five years, indicating varying levels of leverage in the company's capital structure. While the ratio has increased from 2019 to 2021, it decreased slightly in 2022 before rising again in 2023. This suggests potential shifts in the company's financing strategy and risk exposure. It's essential for stakeholders to assess the implications of these fluctuations on the company's financial stability and growth prospects, ensuring a balanced approach to debt management and shareholder equity.



Debt to Asset Ratio=Total Debt / Total Asset	Column1
2023	0.322717935
2022	0.31
2021	0.335154161
2020	0.304099099
2019	0.281944357

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The debt to asset ratio reflects the proportion of the company's assets financed by debt, with a lower ratio indicating less reliance on borrowing for asset acquisition. Over the past five years, the ratio has exhibited a generally increasing trend, suggesting a gradual rise in debt financing relative to total assets. While this trend could indicate strategic expansion or investment opportunities, stakeholders should closely monitor the ratio's trajectory to ensure sustainable debt management and mitigate potential risks associated with increased leverage. Evaluating the company's ability to generate returns on assets and manage debt repayment obligations is essential for maintaining financial stability and long-term viability.

## Chapter: 06

### Findings And Suggestions

#### Findings Suggestions

- The current ratio has shown a slight decline over the past five years, from 1.994 in 2019 to 1.759 in 2023, indicating a slight weakening in short-term liquidity.
- Bosch's net profit ratio has varied significantly, with a peak of 13.42% in 2019 and a low of 5.09% in 2021. This suggests fluctuating profitability over the period.
- The quick ratio has shown a decreasing trend over the years, indicating a reduction in Bosch's ability to meet short-term obligations with its most liquid assets. It ranges from 1.547 in 2019 to 1.380 in 2023.
- Bosch's net profit ratio has varied significantly, with a peak of 13.42% in 2019 and a low of 5.09% in 2021. This suggests fluctuating profitability over the period.
- Bosch maintains a generally healthy liquidity position and a stable capital structure with reasonable levels of profitability and debt.

#### Conclusion

In conclusion, the empirical study on ratio analysis with reference to Suman and Co provides valuable insights into the financial performance of Bosch Ltd over the past five years. Through comprehensive analysis of liquidity ratios, profitability ratios, leverage ratios, and other key financial metrics, several notable trends and findings have emerged.

Firstly, the study highlights a slight decline in Bosch's current ratio over the period, indicating a potential weakening in short-term liquidity. However, despite this decline, the company's current ratio remains above 1, indicating adequate liquidity to meet its short-term obligations.

Secondly, Bosch's net profit ratio has exhibited significant fluctuations, with peaks and lows indicating varying levels of profitability over the years. This underscores the importance of closely monitoring factors influencing profitability, such as cost management and revenue generation strategies.

Furthermore, the study reveals a decreasing trend in Bosch's quick ratio, suggesting a reduction in the company's ability to meet short-term obligations with its most liquid assets. This trend emphasizes the importance of optimizing inventory management and liquidity strategies to maintain financial health.

Despite these challenges, Bosch maintains a generally healthy liquidity position and a stable capital structure, with reasonable levels of profitability and debt. The findings suggest that while there may be areas for improvement, the company's overall financial performance remains resilient.

In light of these findings, it is recommended that Bosch continues to closely monitor key financial metrics, implement targeted strategies to address areas of weakness, and leverage its strengths to capitalize on



market opportunities. Additionally, benchmarking against industry standards and best practices can provide valuable insights for strategic decision-making and long-term sustainability.

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