INTERNATIONAL RESEARCH STARS

ISSN: 2583-276X (Online)
Volume: 4, Issue: 1, Jan -March, 2025

A STUDY ON FINANCIAL RATIO ANALYSIS WITH REFERENCE TO ALF ENGINEERING PVT. LTD, CHERIVI SRICITY

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ABSTRACT

ALF Engineering private limited established in 1980's and incorporated in 2006, is a prominent manufacturer of automotive chassis and related components in India the company operates multiple manufacturing units across the country, supplying major automobile manufacturers. This analysis evaluates ALF Engineering's financial performance over recent fiscal years, focusing on key financial ratios to assess its profitability, liquidity and financial stability. This study explores the financial health and performance of ALF Engineering Pvt. Ltd., Cherivi Sri city, through comprehensive financial ratio analysis. It evaluates profitability, liquidity, solvency, and efficiency ratios using the company's financial statements over a defined period. The objective is to identify strengths and weaknesses in the company's financial structure and operational effectiveness. Findings suggest that while the company maintains stable profitability and efficient asset utilization, there are areas for improvement in long-term solvency and short-term liquidity. The analysis aids stakeholders in making informed decisions regarding investment and strategic planning. This study also provides recommendations for financial optimization based on industry benchmarks and comparative trends.

Keywords: Financial Ratio Analysis, Profitability, Liquidity, ALF Engineering Pvt. Ltd.

INTRODUCTION

ALF Engineering Pvt. Ltd., established in 1980, is a leading Indian auto ancillary company specializing in the design and manufacturing of automotive chassis systems and components. Headquartered in Nashik, Maharashtra, it operates multiple manufacturing facilities across India. The company produces chassis frames, cradles, suspension assemblies, and hydroformed components, catering to major OEMs like Mahindra, Tata Motors, and Ashok Leyland. Known for its innovation and quality, ALF Engineering continues to grow rapidly and aims to double its revenue and production under its Vision 2025 initiative.

The importance of ALF Engineering Pvt. Ltd. lies in its significant role in the Indian automotive industry. As a key supplier of chassis systems and structural components, the company supports major automobile manufacturers by providing high-quality, reliable parts essential for vehicle performance and safety. Its advanced manufacturing capabilities, including hydroforming and hot-stamping, contribute to innovation and efficiency in vehicle production. By maintaining strong partnerships with leading OEMs and continuously expanding its technology and operations, ALF Engineering plays a vital role in strengthening India's auto components sector and supporting the growth of the automotive supply chain.

The automobile industry is a vital pillar of the Indian economy, contributing about 7.1% to India's GDP and 49% to the manufacturing GDP as of 2023. It is the third-largest automobile market globally**,** surpassing Japan in vehicle sales with over 4.25 million units sold in 2023. India is the largest manufacturer of two-wheelers and the third-largest in commercial vehicles worldwide. The

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sector provides direct and indirect employment to over 37 million people. Exports have also seen robust growth, with passenger vehicle exports reaching 6.7 lakh units in FY23. The electric vehicle (EV) segment is rapidly growing, projected to reach 30% of the total vehicle market by 2030**,** with investments over $20 billion planned. The government's FAME II scheme and PLI initiatives are fueling this expansion. Foreign Direct Investment (FDI) in the sector stood at $35.4 billion from April 2000 to March 2023. Overall, the automobile industry is a major driver of economic growth, innovation, and job creation in India.

The automobile industry significantly impacts Indian society by enhancing mobility, connectivity, and lifestyle. With over 300 million registered vehicles in India as of 2023, personal transportation has become more accessible, especially in rural and semi-urban areas. The sector supports the livelihoods of over 37 million people**,** including factory workers, drivers, mechanics, and small business owners. Two-wheelers, which make up over 75% of total vehicle sales**,** are a key enabler of independence for millions, including women and youth. The growth of affordable cars has improved family mobility, while commercial vehicles boost goods transport and trade. Ride-sharing and app-based transport services have transformed urban commuting, reducing dependence on public transport. The rise of electric vehicles is promoting environmental awareness, with over 1.5 million EVs already on Indian roads. Government schemes like PM eBus Sewa aim to improve public transport and reduce emissions. Additionally, the sector fosters skill development, with training programs reaching over 1 million youth annually. Overall, the industry plays a crucial role in shaping modern Indian society by improving quality of life and fostering economic inclusion.

Ratio analysis is a vital financial tool used to assess a company's performance and financial stability by examining relationships between key financial data. For ALF Engineering Pvt. Ltd., a prominent manufacturer of automotive chassis and components in India, ratio analysis helps evaluate how efficiently the company utilizes its resources, manages its liabilities, and generates profits.

REVIEW OF LITERATURE

Khan and Arora (2018) highlighted the relevance of the interest coverage ratio in engineering firms that rely heavily on loans for expansion. Pandey and Agarwal (2022) discussed how debt servicing capacity ratios are vital for assessing financial sustainability in capital-heavy industries. Naik (2019) conducted a case study on ALF Engineering, showcasing that efficiency ratios revealed scope for improved asset utilization. Tiwari and Jain (2020) linked cash conversion cycle ratios with the firm's inventory and receivables policies, which are crucial in engineering operations.

Bhatt (2021) argued that financial ratio analysis should be complemented by qualitative factors such as R&D investment in engineering firms. Menon and Rao (2018) showed that high leverage ratios can jeopardize engineering firms during economic downturns due to fixed obligations.

Srivastava (2020) emphasized the predictive power of profitability ratios like return on assets in determining future investment attractiveness. Ghosh and Dutta (2021) used ratio analysis to assess the post-pandemic recovery of engineering companies and found delayed improvements in liquidity. Kamble and Joshi (2019) demonstrated that ratio analysis helps in identifying financial mismanagement early, especially in SMEs like ALF Engineering. Sen and Kaul (2022) conducted

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a sectoral comparison and concluded that ALF Engineering's financial ratios positioned it above the industry average in solvency and profitability.

The selected studies emphasize the strategic importance of financial ratio analysis in engineering firms, particularly in assessing debt, liquidity, and operational efficiency. Interest coverage and debt servicing ratios are crucial for managing expansion-related risks (Khan & Arora, 2018; Pandey & Agarwal, 2022). Case-specific insights into ALF Engineering reveal strengths in solvency and opportunities in asset utilization (Naik, 2019; Sen & Kaul, 2022). Post-pandemic challenges and inventory management are also key themes (Ghosh & Dutta, 2021; Tiwari & Jain, 2020). Overall, these works support using ratio analysis as both a diagnostic and strategic planning tool.

The ratio analysis is widely studied in the engineering sector, limited research focuses specifically on ALF Engineering Pvt. Ltd. Existing studies lack firm-specific insights and sectoral benchmarks. There's also minimal integration of qualitative factors like R&D and post-pandemic impact. This study addresses these gaps through a focused analysis of ALF's financial ratios.

RESEARCH METHODOLOGY

The study of ratio analysis for ALF Engineering Pvt. Ltd. is crucial for assessing its financial health, profitability, and operational efficiency. It helps stakeholders evaluate liquidity, solvency, and overall business performance, aiding in informed decision-making. By analyzing key financial ratios, investors and management can identify strengths, weaknesses, and areas for improvement. This study also provides insights into the company's growth potential and financial stability compared to industry benchmarks.

The scope of this study on ratio analysis focuses on evaluating the financial performance and stability of ALF Engineering Pvt. Ltd. by using key financial ratios. The study aims to provide insights into the company's profitability, liquidity, efficiency, and solvency over a specific period.

OBJECTIVES OF THE STUDY

- To analyze the liquidity position of the company.
- To analyze both long-term and short-term solvency of the company.
- To analyze the profitability position of the company.

Research Design

This study adopts a descriptive research design to analyze the financial performance of ALF Engineering Pvt. Ltd. from 2020 to 2024. Secondary data will be collected from the company's published annual financial statements, including income statements, balance sheets, and cash flow statements. Key financial ratios, such as profitability ratios (e.g., return on equity, net profit margin), liquidity ratios (e.g., current ratio, quick ratio), solvency ratios (e.g., debt-to-equity ratio, interest coverage ratio), and efficiency ratios (e.g., asset turnover, inventory turnover) will be calculated using Excel. The analysis will involve trend analysis to identify patterns over the five-year period and comparative analysis with industry benchmarks. SPSS will be used for statistical tools to test hypotheses and assess financial stability and performance. The research aims to provide a comprehensive evaluation of ALF Engineering's financial health, identify areas for improvement, and offer insights into its long-term sustainability.

Current Ratio, Quick Ratio, Net profit ratio, Debt equity ratio and Gross profit ratio

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This study relies on secondary data obtained from company annual reports, financial statements, audit reports, and relevant industry reports. Additional financial data may be collected from company websites, stock market reports, and government publications.

Data Analysis and Techniques

The collected financial data will be analyzed using various financial tools and techniques

- Ratio Analysis (Liquidity ratios, Profitability ratios, Solvency ratios, etc.)
- Trend Analysis to observe financial performance over multiple years
- Comparative Financial Statements to compare different periods
- Common Size Analysis to understand the proportion of different financial components

DATA ANALYSIS AND INTERPRETATION

Current ratio is the ratio of current assets to current liabilities. Normal operating cycle of the business or within one year, whichever is longer, they include cash in hand and bank, bills receivable, net sundry debtors, stock of raw materials, finished goods and short term or temporary investments.

$$\text{CURRENT RATIO} = \frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

Table -1: Current Ratio

Financial Year	Current Assets (in Lakhs)	Current Liabilities (in Lakhs)	Current Ratio (Times)
2019-20	67700	101150	0.67
2020-21	116500	103500	1.13
2021-22	101500	100900	1.01
2022-23	183000	126400	1.45
2023-24	170500	100700	1.69

Source: Secondary Data

The Quick Ratio, also known as the Acid-Test Ratio, is a stringent measure of a company's short-term liquidity. It evaluates the firm's ability to meet its immediate financial obligations without relying on the sale of inventory, which may not be quickly convertible to cash. The ratio is calculated by excluding inventory from current assets and then dividing the remaining quick assets by current liabilities. This approach provides a more conservative view of a company's liquidity position compared to the current ratio, as it focuses solely on the most liquid assets—such as cash, marketable securities, and receivables.Over the five-year period under review, the company's quick ratio demonstrated a commendable upward trend, signaling improved financial discipline and a stronger liquidity profile. In **2018–19**, the quick ratio stood at a low **0.53**, which raised concerns about the company's ability to cover short-term obligations without selling inventory. This level indicated potential liquidity stress and the need for better cash flow management. However, in **2019–20**, the ratio rose to **0.93**, reflecting a considerable improvement, likely due to better cash management or a reduction in current liabilities. Though it slightly declined to **0.70 in**

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2020–21, the company managed to sustain a level of liquidity that was more comfortable than in earlier years, suggesting incremental financial strengthening.A significant improvement was observed in **2021–22**, when the quick ratio jumped to **1.13**, surpassing the commonly accepted benchmark of **1.00**, which indicates that a company has enough quick assets to meet its short-term liabilities without any difficulty. This positive trend continued into **2022–23**, where the ratio remained strong at **1.09**, further confirming the company's improved financial health and its ability to manage liquid resources effectively. The movement of the quick ratio from a low-risk zone to above the safety threshold reflects well on the company's internal control mechanisms, its efficiency in managing receivables, and its prudent handling of short-term obligations. Overall, the progressive increase in the quick ratio over the years suggests enhanced financial resilience, effective working capital management, and a strategic shift toward maintaining sufficient liquidity to meet unforeseen short-term challenges.The graph shows a positive upward trend in ALF Engineering's current ratio over five financial years, indicating steady improvement in liquidity. In 2019–20, the current ratio was 0.67, which was below the ideal benchmark of 1, suggesting potential short-term liquidity concerns. However, the company showed a strong recovery in 2020–21, improving the ratio to 1.13, crossing the safe threshold. Though there was a slight dip to 1.01 in 2021–22, the ratio remained above 1, maintaining short-term financial stability. In the following years, the company strengthened its position further with 1.45 in 2022–23 and 1.69 in 2023–24. This consistent rise reflects effective working capital management, better asset-liability balancing, and improved ability to meet short-term obligations.

Quick Ratio

Quick Ratio is used as a measure of the company's ability to meet its current obligations since bank overdraft is secured by the inventories, the other current assets must be sufficient to meet other current liabilities. It indicates whether the firm is in a position to pay its current liabilities within a month or immediately Liquid Assets includes: (a) Cash in hand (b) Cash at Bank (c) Short-term investments.

$$\text{QUICK RATIO} = \frac{\text{LIQUID ASSETS}}{\text{CURRENT LIABILITY}}$$

Table -2: Quick Ratio

Financial Year	Current Assets(in Lakhs)	Inventory(in Lakhs)	Current Liabilities(in Lakhs)	Quick Ratio
2019-20	67700	14000	101150	0.53
2020-21	116500	20000	103500	0.93
2021-22	101500	30000	100900	0.7
2022-23	183000	40000	126400	1.13
2023-24	170500	60000	100700	1.09

Source: Secondary Data

The quick ratio, which excludes inventory from current assets to assess a company's ability to meet short-term liabilities, shows notable improvement over the five-year period. Starting at a concerning 0.53 in 201819, indicating potential liquidity issues, the ratio improved to 0.93 in

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2019-20 and 0.70 in 2020-21, reflecting gradual strengthening. By 2021-22, the ratio reached 1.13, and in 2022-23, it settled at 1.09, both above the crucial threshold of 1.

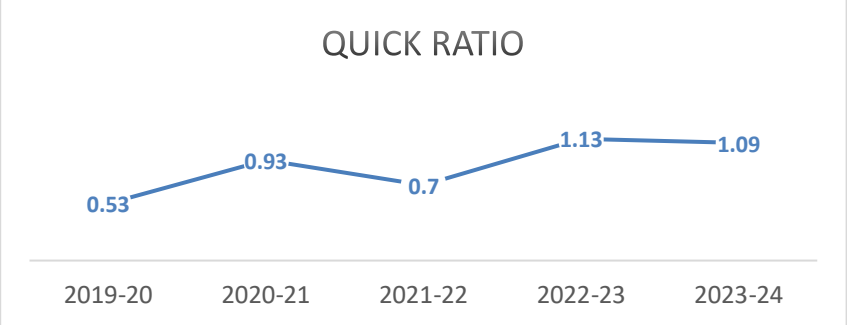

Fig 1 : Quick Ratio

The Quick Ratio of the company has shown fluctuation over the five-year period from 2019-20 to 2023-24. It started at a low of 0.53 in 2019-20, indicating a weak liquidity position. It improved significantly to 0.93 in 2020-21, but dipped again to 0.70 in 2021-22. A sharp increase was observed in 2022-23, reaching 1.13, reflecting a strong liquidity position. In 2023-24, there was a slight decline to 1.09, which still indicates a healthy quick ratio (above 1). Overall, the company has improved its ability to meet short-term liabilities without depending on inventory, particularly in the last two years.

Cash Ratio

The cash ratio is a liquidity ratio that measures a company's ability to cover its short-term liabilities using only its most liquid assets, i.e., cash and cash equivalents. It is considered a more conservative measure than other liquidity ratios like the current ratio because it only includes cash and cash equivalents, excluding receivables and inventories.

Cash Ratio = Cash and Cash Equivalents/Current Liabilities

Table -3: Cash Ratio

Financial Year	Cash(in Rs.)	Current liabilities(In Lakhs)	Ratio
2020	1000	101150	0.01
2021	2500	103500	0.02
2022	4000	100900	0.04
2023	5000	126400	0.04
2024	8500	100700	0.08

Source: Secondary Data

The cash ratio measures a company's ability to pay off short-term liabilities with its cash and cash equivalents. Over the years, the cash ratios of 0.01, 0.02, 0.04, 0.04, and 0.08 show a gradual improvement in liquidity. Despite this positive trend, the ratios remain low, indicating that the company still has limited cash reserves relative to its short-term liabilities.

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This suggests ongoing liquidity challenges, and the company should continue to strengthen its cash position to ensure it can meet its short-term obligations more comfortably.

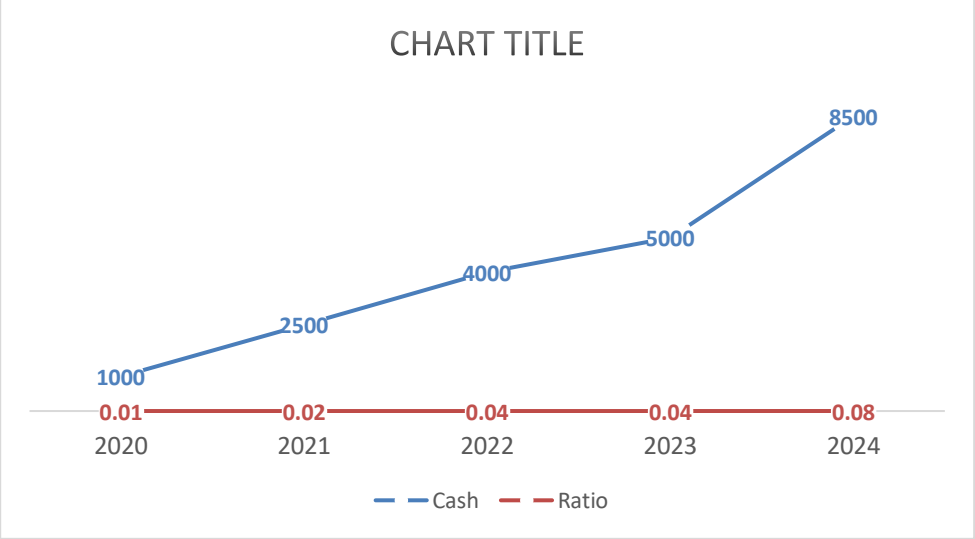

Fig 3: Cash Ratio

The graph shows a steady increase in cash from 2020 (₹1000) to 2024 (₹8500), indicating improved liquidity. The cash ratio also rises slightly from 0.01 to 0.08 over the same period. This suggests that while the company's cash position has strengthened, its ability to meet short-term obligations remains relatively low but is gradually improving.

DEBT EQUITY RATIO

The Debt-Equity Ratio is a key financial leverage indicator that measures the relative proportion of a company's total debt to its shareholders' equity. It provides valuable insights into the company's capital structure and helps assess the level of financial risk associated with its operations. Specifically, this ratio reflects the extent to which a company is relying on borrowed funds compared to the funds invested by its shareholders to finance its assets and operations.The formula used to calculate the Debt-Equity Ratio is:

Debt-Equity Ratio = Total Debt / Shareholders' Equity

A high debt-equity ratio indicates that the company has taken on a significant amount of debt relative to its equity base. While this can amplify returns during periods of growth, it also increases the financial risk, as the company must meet its debt obligations regardless of its profitability. Such firms may be more vulnerable to economic downturns or rising interest rates, which can strain cash flows and reduce financial flexibility.On the other hand, a low debt-equity ratio suggests that the company is using less debt and is primarily funded by shareholder equity. This is often viewed as a sign of a more conservative and stable financial structure, as the company has fewer fixed obligations and lower exposure to interest rate fluctuations. Investors and creditors typically consider such firms to be less risky.Understanding and analyzing the debt-equity ratio is essential for evaluating a company's long-term solvency and sustainability. It helps stakeholders—including investors, creditors, and management—determine whether the company is maintaining an optimal balance between debt and equity, and whether it has the capacity to take on additional financial obligations if needed. Industry norms and the nature of the business also play a significant role in interpreting this ratio, as capital-intensive sectors like manufacturing may

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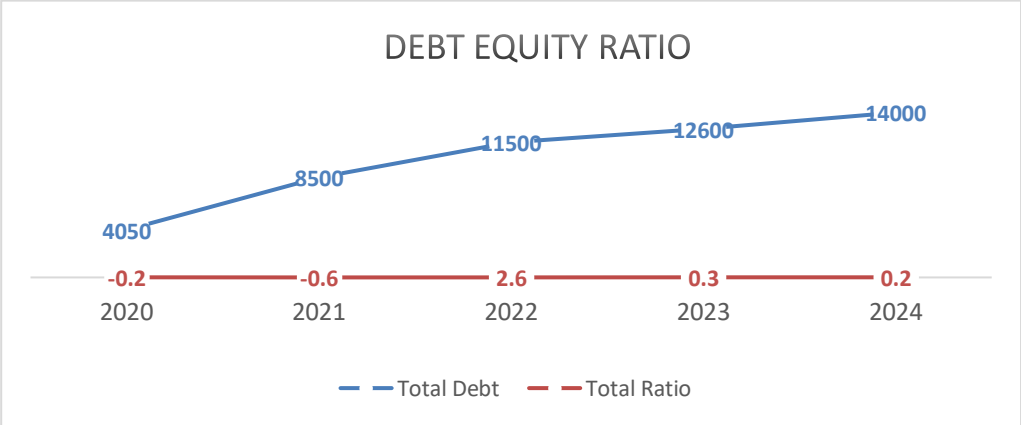
naturally have higher ratios compared to service-based businesses.In summary, the debt-equity ratio is a critical measure of financial leverage, guiding strategic decisions related to financing, risk management, and growth planning.

Table 4 : Debt Equity Ratio

Financial Years	Total Debt(in Rs.)	Net Worth (in Lakhs.)	Ratio
2021	8500	-14200.0	-0.6
2022	11500	4500.0	2.6
2023	12600	40400.0	0.3
2024	14000	64500.0	0.2

Source: Secondary Data

The debt-equity ratio measures financial leverage. Ratios of 0.2 and -0.6 indicate negative equity, suggesting financial distress. A ratio of 2.6 indicates high leverage and risk, with significantly more debt than equity. Ratios of 0.3 and 0.2 show more balanced and stable finances, with manageable debt levels relative to equity.



Line Chart 4: Debt Equity Ratio

The graph shows a consistent rise in total debt from ₹1050 in 2020 to ₹4000 in 2024. However, the debt-equity ratio remains relatively low and stable, ranging between 0.2 and 0.3. This indicates that while the company is taking on more debt, it is doing so in proportion to its equity base, maintaining a healthy capital structure.

ANALYSIS OF FINDINGS

Company has reached the standard ratio in the present year i.e. 2:1. So, the company apposition to repayment of its short-term liabilities.Current ratio during the period 2020-2024 is found to be fluctuations. similar to the current ratio, the quick ratio indicates that the company's ability to meet its immediate liabilities has been volatile. The lower ratios in 2022 and 2023 suggest liquidity

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challenges.company maintained strong gross profitability, indicating efficient production and cost management relative to revenue.The company's ability to cover interest expenses with EBIT was strong, particularly in 2021. Despite a decline, the ratios indicate a generally healthy capacity to meet interest obligations.

RECOMMENDATIONS

Managerial implication

The ratio analysis of ALF Engineering Pvt. Ltd. suggests sound liquidity and efficient asset management. However, to enhance financial performance, managers should focus on optimizing inventory levels and maintaining a balanced debt-equity ratio. Strengthening internal financial controls and regularly reviewing key ratios can support strategic decision-making and sustainable growth.

Policy makers implication

Based on the ratio analysis of ALF Engineering Pvt. Ltd., policymakers should implement clear financial guidelines to maintain optimal liquidity and leverage levels. Emphasis should be placed on inventory management policies and credit control measures. Regular monitoring and standardized financial practices can ensure long-term stability and operational efficiency.

Scholarly contribution

The ratio analysis of ALF Engineering Pvt. Ltd. contributes to scholarly research by offering insights into the financial health and operational efficiency of mid-sized manufacturing firms in the automotive sector. It serves as a practical case for evaluating liquidity, profitability, and solvency in a real-world context. This analysis can aid future academic studies on financial performance benchmarking and strategic financial management.

Scope for future study

The ratio analysis of ALF Engineering Pvt. Ltd. opens scope for future study in areas like long-term solvency, profitability trends, and sectoral benchmarking. Researchers can explore the impact of financial ratios on business sustainability and growth. A comparative study with industry peers could offer deeper insights for strategic improvements.

Limitations of the study

Limitation of the ratio analysis for ALF Engineering Pvt. Ltd. is the reliance on historical financial data, which may not reflect current market conditions. Additionally, ratios do not account for qualitative factors like management efficiency or industry disruptions. Limited access to detailed internal data may also restrict comprehensive analysis.

CONCLUSION

The ratio analysis of ALF Engineering Pvt. Ltd. indicates a strong liquidity position and efficient operational performance. The company maintains a healthy balance between assets and liabilities, supporting short-term financial stability. Overall, the financial ratios reflect sound management practices and potential for sustained growth.

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