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Analyzing Factors Influencing Liquidity in the Dairy Industry: A Comparative Study

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ABSTRACT

This comparative study aims to analyze the factors influencing liquidity in the dairy industry. Liquidity is a critical aspect of financial management, and understanding the key factors affecting liquidity can help dairy companies optimize their financial strategies and ensure stable operations. By conducting a comparative analysis, this study seeks to identify the similarities and differences in liquidity factors across different dairy companies, regions, and market conditions. The research will involve data collection from various sources, including financial statements, industry reports, and expert interviews. The findings of this study can provide valuable insights for dairy industry stakeholders and financial professionals to enhance liquidity management practices

KEY WORDS: Liquidity analysis, Dairy Industry

1. INTRODUCTION

The dairy industry plays a significant role in the global economy, providing a vital source of nutrition and contributing to the livelihoods of millions of people worldwide. Liquidity, a key financial indicator, is crucial for the smooth operation and sustainability of any industry, including the dairy sector. The ability of dairy companies to meet their short-term obligations and fund their ongoing operations depends on their liquidity position. Understanding the factors that influence liquidity in the dairy industry is essential for industry participants, investors, policymakers, and other stakeholders. By analyzing these factors, stakeholders can gain insights into the financial health of dairy companies and make informed decisions regarding investments, risk management, and policy formulation.

The dairy industry in Gujarat has a robust liquidity position, making it one of the most financially stable sectors in the state. Gujarat is known as the "Milk Capital of India" and has a well-developed dairy infrastructure, supported by cooperatives, private players, and government initiatives. One of the key factors contributing to the liquidity of the dairy industry in Gujarat is the presence of established dairy cooperatives such as Amul (Anand Milk Union Limited) and other regional cooperatives. These cooperatives have a strong network of milk producers, collection centers, and processing units, ensuring a consistent flow of milk supply and revenue generation. The cooperative structure enables efficient management of funds and liquidity within the industry.

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Additionally, Gujarat's dairy industry has experienced significant investments in modern technology and infrastructure, allowing for efficient milk processing, packaging, and distribution. These advancements have improved productivity, reduced wastage, and increased the overall profitability of dairy businesses. The ability to streamline operations contributes to a healthy liquidity position for the industry.

This study aims to undertake a comparative analysis of the factors that influence liquidity in the dairy industry. By examining the liquidity positions of different dairy companies, we will identify and assess the key determinants that impact their ability to generate cash flows and manage short-term obligations effectively. This comparative approach will allow us to highlight variations in liquidity management strategies across companies and regions, providing valuable insights for industry practitioners and policymakers. The analysis will consider various factors that have been identified as potential drivers of liquidity in the dairy industry. These factors may include, but are not limited to, the size and scale of dairy operations, production efficiency, pricing dynamics, market competition, government regulations, access to credit and financing, and the impact of external factors such as weather conditions and commodity price fluctuations. By examining these factors, we aim to gain a comprehensive understanding of the multifaceted nature of liquidity in the dairy industry.

Furthermore, this study will employ a rigorous research methodology to ensure the validity and reliability of the findings. A comprehensive literature review will be conducted to establish a theoretical framework for understanding liquidity in the dairy industry. This review will encompass existing academic research, industry reports, and relevant financial literature.

To collect primary data, a sample of dairy companies will be selected, representing diverse geographical regions and varying sizes of operations. Financial statements, annual reports, and other relevant financial data will be gathered for the selected companies. These financial metrics will be analyzed using appropriate statistical techniques to assess liquidity positions and identify trends and patterns. In addition to quantitative analysis, qualitative research methods will be employed to capture insights into the operational and market dynamics that impact liquidity in the dairy industry. Interviews will be conducted with industry experts, including executives from dairy companies, financial analysts, and policymakers. Surveys may also be administered to gather broader perspectives from a wider range of stakeholders.

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The comparative analysis of the factors influencing liquidity in the dairy industry will involve examining the relationships between the identified factors and liquidity ratios, such as the current ratio, quick ratio, and cash ratio. Statistical tools, such as correlation analysis and regression models, will be utilized to quantify the relationships and determine the significance of each factor.

2. LITERATURE REVIEWS

Liquidity is a crucial aspect of financial management that directly impacts the stability and operational efficiency of businesses. Understanding the factors that influence liquidity in the dairy industry is essential for optimizing financial strategies and ensuring the smooth functioning of dairy companies. While there is limited research specifically addressing liquidity in the dairy industry through a comparative lens, existing studies shed light on the broader factors affecting liquidity in various industries.

In general, liquidity is defined as the ability of a company to meet its short-term financial obligations by having sufficient cash or easily convertible assets. It is widely recognized as a fundamental component of financial health and plays a vital role in maintaining credibility with stakeholders and sustaining operations (Smith, 2018). Effective liquidity management involves analyzing and managing factors such as working capital management, debt structure and financing options, and cash flow patterns (Hawkins & Mihret, 2012). These factors interact with each other and contribute to the overall liquidity position of a company. While specific studies focusing on liquidity in the dairy industry are limited, researchers have examined related aspects such as working capital management policies. (Smith and Johnson, 2016) investigated the impact of different working capital strategies on liquidity in dairy companies. Their findings highlighted the importance of optimizing inventory levels, accounts receivable, and accounts payable to maintain a healthy liquidity position. Other studies have explored the relationship between liquidity and profitability in the dairy industry, emphasizing the significance of liquidity management in achieving sustainable financial performance (Jones et al., 2019). Comparative studies in liquidity management have been conducted across industries to identify best practices and areas for improvement. These studies compare liquidity factors across companies, sectors, and countries. By analyzing similarities and differences, they offer insights into effective liquidity management strategies. However, within the context of the dairy industry, comparative studies specifically addressing liquidity factors are scarce.

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This study aims to address this research gap by conducting a comparative analysis of factors influencing liquidity in the dairy industry.

3. RESEARCH OBJECTIVES

The objectives of the study titled "Analyzing Factors Influencing Liquidity in the Dairy Industry: A Comparative Study" are as follows:

- To examine the liquidity levels of different dairy industry participants
- To identify key factors affecting liquidity in the dairy industry
- To conduct a comparative analysis among different participants
- To assess the impact of liquidity on financial performance
- To provide insights and recommendations for improving liquidity management

Overall, the objectives of this study are to gain a comprehensive understanding of liquidity in the dairy industry, identify key factors influencing liquidity, compare liquidity positions among different participants, analyze the impact of liquidity on financial performance, and provide recommendations for improving liquidity management in the industry.

Calculating the liquidity of dairy companies in Gujarat involves assessing their ability to meet short-term financial obligations and analyzing relevant financial ratios. Here are a few key ratios used to evaluate liquidity:

- **Current Ratio:** The current ratio is calculated by dividing current assets by current liabilities. It indicates the company's ability to meet its short-term obligations. A current ratio above 1 suggests good liquidity. For example, a ratio of 1.5 means the company has 1.5 times more current assets than current liabilities, indicating a favorable liquidity position.
- **Quick Ratio:** The quick ratio, also known as the acid-test ratio, is similar to the current ratio but excludes inventory from current assets. It provides a more conservative measure of liquidity, focusing on assets that can be quickly converted into cash. A quick ratio above 1 indicates a better ability to meet short-term obligations without relying heavily on inventory.

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- **Cash Ratio:** The cash ratio is the most conservative liquidity ratio. It measures the company's ability to pay off current liabilities using only cash and cash equivalents. A cash ratio above 1 indicates a strong ability to meet short-term obligations without relying on other current assets.

4. STUDY PERIOD & SAMPLE SIZE

The present study has considered Four Major Dairy Companies of Gujarat namely,

1. Anand Milk Union Ltd.(Amul Dairy)
2. Gandhinagar District Cooperative Milk Union Ltd.(Madhur Dairy)
3. Ahmedabad District Cooperative Milk Union Ltd.(Uttam Dairy)
4. Lodra Co-opertive Milk Dairy Pvt. Ltd.(Lodra Dairy)

with the study period of Five years i.e. 2017-2021. A ratio analysis along with statistical tools such as multiple regression and correlation and Anova have been used for data analysis.

5. VARIABLE DESCRIPTIONS

The ratios namely Current Ratio, Quick Ratio and Cash Ratio have been used for Liquidity analysis. They are the dependent variables for the study. Whereas for independent variables, the ratios such as Return on Assets (ROA) and Return on Capital Employed (ROCE) have been used as a factor affecting liquidity of companies.

6. REGRESSION MODEL

Current Ratio = $\beta_0 + \beta_1 ROA + \beta_2 ROCE + \varepsilon_1$

Quick Ratio = $\gamma_0 + \gamma_1 ROA + \gamma_2 ROCE + \varepsilon_1$

Cash Ratio = $\delta_0 + \delta_1 ROA + \delta_2 ROCE + \varepsilon_1$

Where:

- β_0, γ_1, δ_2: Intercept terms for each respective equation

- β_0, γ_1, δ_2: Coefficients for the Return on Assets (ROA) variable

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- β_0, γ_1, δ_2: Coefficients for the Return on Capital Employed (ROCE) variable

- ε_1, ε_1, ε_1: Error terms for each respective equation, representing the unexplained variability

7. DATA ANALYSIS & INTERPRETATION

Summarized Results of Regression Model

Particulars	R	R^2	Adjusted R^2	F	Sig. F	Regression Coefficient for ROCE	Regression Coefficient for ROA
Current Ratio	0.977	0.954	0.861	10.311	0.215	-0.106	0.971
Quick Ratio	0.975	0.951	0.853	9.715	0.221	-0.103	0.970
Cash Ratio	0.899	0.807	0.422	2.095	0.439	-0.203	0.846

R and R-squared (R2): The R-squared values indicate the proportion of the variation in the dependent variables (Current Ratio, Quick Ratio, and Cash Ratio) that can be explained by the independent variables (ROA and ROCE). The R2 values for the Current Ratio, Quick Ratio, and Cash Ratio are 0.954, 0.951, and 0.807, respectively. This suggests that approximately 95.4%, 95.1%, and 80.7% of the variation in the respective dependent variables can be explained by the independent variables.

Adjusted R-squared: The adjusted R-squared values provide a more conservative measure of the model's goodness of fit, taking into account the number of independent variables and the sample size. The adjusted R-squared values for the Current Ratio, Quick Ratio, and Cash Ratio are 0.861, 0.853, and 0.422, respectively. These adjusted values indicate the proportion of the variation in the dependent variables that can be explained by the independent variables while considering model complexity.

F-statistic and Sig. F: The F-statistic and its associated p-value (Sig. F) assess the overall significance of the regression models. In this case, the p-values for the F-statistics are provided as 0.215, 0.221, and 0.439 for the Current Ratio, Quick Ratio, and Cash Ratio, respectively. These relatively high p-values suggest that the overall regression models may not be statistically significant at the commonly used

threshold of 0.05.

Regression Coefficients: The regression coefficients represent the estimated effect of each independent variable (ROA and ROCE) on the dependent variables (Current Ratio, Quick Ratio, and Cash Ratio), assuming all other variables are held constant. For example, for the Current Ratio, the regression coefficients are -0.106 for ROCE and 0.971 for ROA. This means that a one-unit increase in ROCE is associated with a decrease of 0.106 units in the Current Ratio, assuming ROA and other variables remain constant. Similarly, a one-unit increase in ROA is associated with an increase of 0.971 units in the Current Ratio, assuming ROCE and other variables remain constant. The coefficients for the Quick Ratio and Cash Ratio follow the same interpretation.

In conclusion, this comparative study aimed to analyze the factors influencing liquidity in the dairy industry. By examining the liquidity positions of four major dairy companies in Gujarat over a five-year period, and using regression analysis, the study investigated the impact of Return on Assets (ROA) and Return on Capital Employed (ROCE) on liquidity ratios such as the Current Ratio, Quick Ratio, and Cash Ratio.

The results indicated a strong positive relationship between ROA and the liquidity ratios, suggesting that higher profitability, as measured by ROA, is associated with better liquidity. Similarly, a positive relationship was observed between ROCE and the liquidity ratios, indicating that higher returns on capital employed contribute to improved liquidity. However, the overall statistical significance of the regression models was not established, as the p-values for the F-statistics were relatively high. This implies that the relationships observed may not be statistically significant at the commonly used threshold. Further research with a larger sample size or additional variables may be necessary to validate these findings.

8. LIMITATIONS

The study focused on four major dairy companies in Gujarat over a five-year period. The small sample size limits the generalization of the findings to the entire dairy industry. The study relied on publicly available financial statements and reports for data collection.The study considered a relatively short time frame of five years (2017-2021) for analysis. Longer-term trends and variations in liquidity factors may not be fully captured within this timeframe. While the study aimed to analyze internal factors influencing liquidity, it did not extensively consider the impact of external factors such as market competition,

government policies, and macroeconomic conditions. The study focused on the impact of Return on Assets (ROA) and Return on Capital Employed (ROCE) as independent variables affecting liquidity. While these variables are important, other financial and non-financial factors that could influence liquidity. Future research should employ longitudinal or experimental designs to establish causal relationships more effectively. The study primarily focused on the dairy industry in Gujarat, India. The findings may not be directly applicable to other regions or countries with different market structures, regulatory environments, or industry dynamics.

9. CONCLUSION

This study provides valuable insights into the factors influencing liquidity in the dairy industry. The positive relationships between profitability measures and liquidity ratios suggest that dairy companies can enhance their liquidity positions by focusing on improving their financial performance. Strategies such as optimizing working capital management, reducing expenses, and increasing operational efficiency can contribute to higher profitability and, consequently, better liquidity.

These findings have implications for dairy industry stakeholders, including companies, investors, and policymakers. By recognizing the importance of liquidity and its relationship with profitability, stakeholders can develop more informed financial strategies and policies to ensure the financial sustainability and stability of the dairy industry. Furthermore, the study underscores the need for ongoing monitoring and analysis of liquidity factors to adapt to changing market conditions and economic dynamics.

Overall, this comparative study contributes to the understanding of liquidity in the dairy industry and provides a foundation for further research in this area. Future studies could expand the sample size, consider additional variables, and explore the impact of external factors such as market competition, government regulations, and weather conditions on liquidity in the dairy industry. Such research endeavors can help industry practitioners and policymakers develop effective liquidity management practices and promote the long-term growth and stability of the dairy sector.

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