



A STUDY ON EFFICIENT FINANCIAL MANAGEMENT IN MANUFACTURING INDUSTRIES

¹ Amoghavarsh H, ² M Vidya Shree

¹ Student, Bachelor of Commerce, PES University

² Assistant Professor, Faculty of Management and Commerce, PES University

INTRODUCTION

Background of the topic

Financial management is crucial for the sustainability and competitiveness of manufacturing industries, impacting employment, innovation, and GDP growth. It involves strategic planning, controlling, and optimizing financial resources to achieve organizational objectives effectively. Key aspects include budgeting, cost control, investment appraisal, working capital management, and risk mitigation. Unique challenges such as capital intensity, fluctuating raw material prices, and complex supply chain dynamics require tailored financial management practices. Conducting comprehensive studies in this area can offer valuable insights to practitioners, policymakers, and researchers, enhancing financial decision-making, driving innovation, and fostering sustainable growth in the manufacturing sector.

Need of the Study

- To understand how financial decisions, impact operational efficiency within manufacturing industries.
- To explore strategies for optimizing financial resources in manufacturing operations.
- To examine the role of efficient financial management in sustaining long-term growth and competitiveness.
- To provide valuable knowledge for academic research and further studies in the field.

Theoretical implications of the topic

1. **Contribution to Financial Management** Theory: A study on efficient financial management in manufacturing industries can contribute new insights and perspectives to existing financial management theories. By examining the unique challenges and opportunities within manufacturing, the study may refine existing theoretical frameworks or propose new ones to better address the complexities of financial management in this sector.

2. Integration of Financial and Operations Management Theories: Manufacturing industries require a comprehensive understanding of both financial management and operations management theories. By exploring the intersection of these two areas, the study can provide a more holistic understanding of how financial decisions impact operational efficiency and vice versa. This integration can enrich theoretical discussions in both fields and offer practical implications for industry practitioners.

REVIEW OF LITERATURE

1. Dr. Jasvir S Sura , Dr. Anju Lather and Rajender (2019) “Comparative Analysis of Value-Based Financial Performance Measures in Indian Manufacturing Companies” The study compares value-based financial performance measures of Indian manufacturing companies from 1999-2000 to 2017-2018. Results indicate varying performance across industries in EVA, CVA, SVA, EP, and CFROI. Overall, Indian manufacturing companies demonstrate sound financial health. No significant differences in financial performance measures were found among industries. The data shows fluctuations in SVA and EP over the study period.

2. Marcos Dieste, Roberto Pannizzolo, Jose Arturo Garza (2021) “Influence of lean manufacturing on firms financial performance”, This paper conducts a systematic literature review on the influence of lean manufacturing on firms' financial performance. It identifies that lean initiatives, particularly JIT and TQM practices, can enhance financial performance measures. The link between lean and financial performance is emphasized, stressing the importance of proper implementation. The study categorizes papers based on publication date, source, and methodology, with 24 papers selected for analysis.

3. Sanjeev Kumar Sarswat, Parvez Alam, Asad Ali (2021) “Performance Evaluation of Indian Supply Chain Management” for manufacturing sector” This research paper delves into the evaluation of Indian supply chain management within the manufacturing sector, emphasizing its significance in today's global market landscape. It sheds light on the challenges encountered by manufacturing companies in India and reviews existing literature on performance measurement approaches in supply chain management.

4. Gunjan Yadav, Sunil Luthra, Sachin Kumar Mangla (2020) “Development of a lean manufacturing framework to enhance its adoption within manufacturing companies in developing economies” This research paper focuses on developing a lean manufacturing framework for adoption in manufacturing companies in developing economies. It identifies key drivers for implementing lean manufacturing and validates the framework through a case study in a manufacturing company.

5. Sanjeev Kumar and K S Ranjani (2018), “Financial constraints and investment decisions of listed Indian manufacturing firms” This study investigates the influence of financial constraints on investment decisions in Indian manufacturing firms, utilizing cash flow sensitivity as a key metric. It emphasizes the significance of internal funds and asset tangibility in mitigating financial constraints, particularly for firms with lower market capitalization and tangible net worth.

6. A Sunny Kumar, V Jaya Prasad, VVK Lakshmi (2017) “Impact of working capital management and Profitability in Indian manufacturing industries” This study delves into the relationship between working capital management and profitability in Indian manufacturing industries by analyzing data from 1654 firms over a 5-year period. Regression analysis revealed the significance of variables such as inventory turnover ratio, creditors turnover ratio, asset turnover ratio, and cash to current asset ratio across all industries.

7. Manmohan Agarwal and Rumi Azim (2021) “The Indian manufacturing sector: Finance, investment and performance” The paper analyzes trends in the composition of borrowings, industry-wise credit deployment, and credit ratings of manufacturing firms in India from 2005 to 2019. It examines the impact of financial stress on the stagnation in the Indian manufacturing sector, finding that sales growth is a major determinant of the investment slowdown.

8. S Parvadavardini, N. Vivek and S.R. Devadasan (2016) “Impact of quality management practices on quality performance and financial performance This study aims to investigate how quality management practices (QM) affect both quality performance and financial performance in manufacturing firms. First, it identifies and categorizes critical QM practices. Then, it proposes and tests a structural model linking these practices with quality performance and financial performance. Data was gathered from 152 Indian manufacturing companies through a questionnaire-based survey.

9. Ajaya Kumar Panda, Swagatika Nanda, “Working capital financing and corporate profitability of Indian manufacturing firms” This paper investigates the connection between working capital financing (WCF) and firm profitability across six crucial manufacturing sectors in India from 2000 to 2016. Using a sample of 1,211 firms, it employs a two-step generalized method of moments (GMM) estimator to examine the non-linear relationship. Findings reveal a convex relationship between WCF and profitability in chemical, construction, and consumer goods sectors, suggesting these firms can use short-term debt to finance working capital without harming profitability.

10. Sachin S.Kamble, Angappa Gunasekaran, Rohit Sharma (2018) “Industry 4.0 and lean manufacturing practices for sustainable organizational performance in Indian manufacturing companies” This paper aims to analyze potential barriers hindering manufacturing organizations from embracing Industry 4.0. It employs interpretive structural modeling (ISM) to establish relationships among barriers and fuzzy MICMAC analysis to determine their driving and dependence power. Experts from industry and academia were consulted, and ISM methodology was used to develop contextual relationships among identified barriers.

RESEARCH DESIGN

Statement of problem

Efficient financial management is crucial for sustaining and growing manufacturing businesses, yet a gap exists between theory and practice in applying financial principles. Manufacturing faces challenges like fluctuating raw material costs and fierce competition, but research addressing financial management in this sector is lacking. There's an urgent need to understand and address barriers to efficiency, offering solutions to

improve financial performance. This study aims to provide tailored insights and recommendations for manufacturing firms to navigate financial complexities and thrive in a dynamic business environment.

Research Gap

Although there's plenty of research out there about managing finances in different industries, there's a noticeable gap when it comes to focusing specifically on manufacturing. While we can find studies about financial management principles that work across different types of businesses, there's not much out there that dives deep into how financial strategies need to be different for manufacturing companies. Understanding exactly what financial strategies work best for manufacturing is super important for these kinds of businesses to do well financially and stay competitive. Basically learning about how financial management and inventory management works in manufacturing industries is the main purpose of this project.

Research Objectives

- To gain knowledge how finance works in manufacturing industries.
- To learn more about the process of supply chain management
- To learn more about the operations carried out in manufacturing industry (The structure and the system)

Scope of Study

- The influence of financial management on profitability will be evaluated by the study
- Surveying manufacturing industry professionals to assess current financial management practices.
- Examining the relationship between financial management practices and operational efficiency.
- Investigating the impact of technological advancements on financial management in manufacturing.

Research Methodology and Data Collection

Research Focus:

- The study concentrates on middle and upper management personnel of industrial businesses in and around Bangalore City.
- The target population comprises this specific demographic.

Sample Size and Selection:

- A sample size of 100 individuals will be selected.
- Stratified random sampling technique will be used to ensure representation across various sizes of manufacturing companies in Bangalore.

Sample Unit:

- Individuals will be chosen based on their experience in the field.
- Aim is to provide a comprehensive insight into the subject matter.\

Data Collection:

- Primary data will be gathered through a structured questionnaire.
- Close-ended questions with multiple-choice answers will be used.
- Secondary data will be collected from reports, articles, and publications.

Data Analysis:

- Both descriptive and qualitative approaches will be employed.
- This will enable a thorough examination of the obtained material to derive meaningful insights.

Statistical Tool - I will use inferential statistics such as the Chi-Square Test to analyze the data from survey-based research. Several actions must be taken during this procedure in order to make reliable judgments regarding the samples. Furthermore, the most effective ways to display our data have been determined to be graphs and pie charts.

Limitations of the study

- Insufficient information about the immediate and long-term effects on financial management.
- Restricted access to manufacturing sector data because to the industries lack of openness.
- A challenge in figuring out how financial management impacts the industrial sector's profitability.
- Difficulty in obtaining feedback from the consumers due to the lack of surveys and questionnaires

DATA ANALYSIS AND INTERPRETATION

Question	Options	Frequency	Percentage(%)
Age	20-25	31	27.7%
	25-30	26	23.2%
	30-35	20	17.9%
	35-40	35	31.3%
Gender	Male	54	48.2%
	Female	58	51.8%
Familiar with the term financial management	Yes	58	51.8%
	No	27	24.1%
	Maybe	27	24.1%
	Minimizing productions costs	32	28.6%

Primary objective of financial management in manufacturing firms	Maximizing shareholders value	32	28.6%
	Ensuring long-term sustainability	30	26.8%
	Maximizing Profits	18	16.1%
Strategies contributing most to efficient financial management in manufacturing industries	Implementing cost-saving measures	31	27.7%
	Investing in technology and automation	41	36.6%
	Developing strategic partnerships	16	14.3%
	Optimizing inventory management	24	21.4%
Extent of external factors influencing financial management decisions	Significantly	42	37.5%
	Moderately	38	33.9%
	Minimally	32	28.6%
Implementation of financial analytical tools for improvement of financial management	Yes	38	33.9%
	No	34	30.4%
	Maybe	40	35.7%
How do you think the size of a manufacturing firm influences its approach to financial management?	Larger firms have more resources for advanced financial strategies	40	35.7%
	Smaller firms are more agile in adapting to market changes	32	28.6%
	Size does not significantly affect financial management practices	40	35.7%
Importance of maintaining debt and equity financing for manufacturing firms	Very important	43	38.4%
	Moderately important	47	42%
	Not important	22	19.6%
Critical factors for optimizing supply chain performance	Inventory management	36	26.8%
	Transportation efficiency	19	17%
	Supplier relationship management	36	32.1%
	Technology integration	27	24.1%
Optimum balance between cost	Prioritize cost efficiency over sustainability	41	36.6%

efficiency and sustainability in supply chain management	Prioritize sustainability over cost efficiency	29	25.9%
	Strive for a balanced approach	29	25.9%
	Not sure	13	11.6%
Role of automation in the future of manufacturing industries	Automation will significantly increase productivity and efficiency	42	37.5%
	Automation will lead to job displacement and economic inequality	23	20.5%
	Automation will have minimal impact on manufacturing industries	37	33%
	Not sure	10	8.9%
Strategies crucial for manufacturing industries to sustain in market	Embracing digital transformation and Industry 4.0 technologies	36	32.1%
	Focusing on product innovation and differentiation	33	29.5%
	Strengthening supply chain resilience and agility	28	25%
	Not sure	15	13.4%

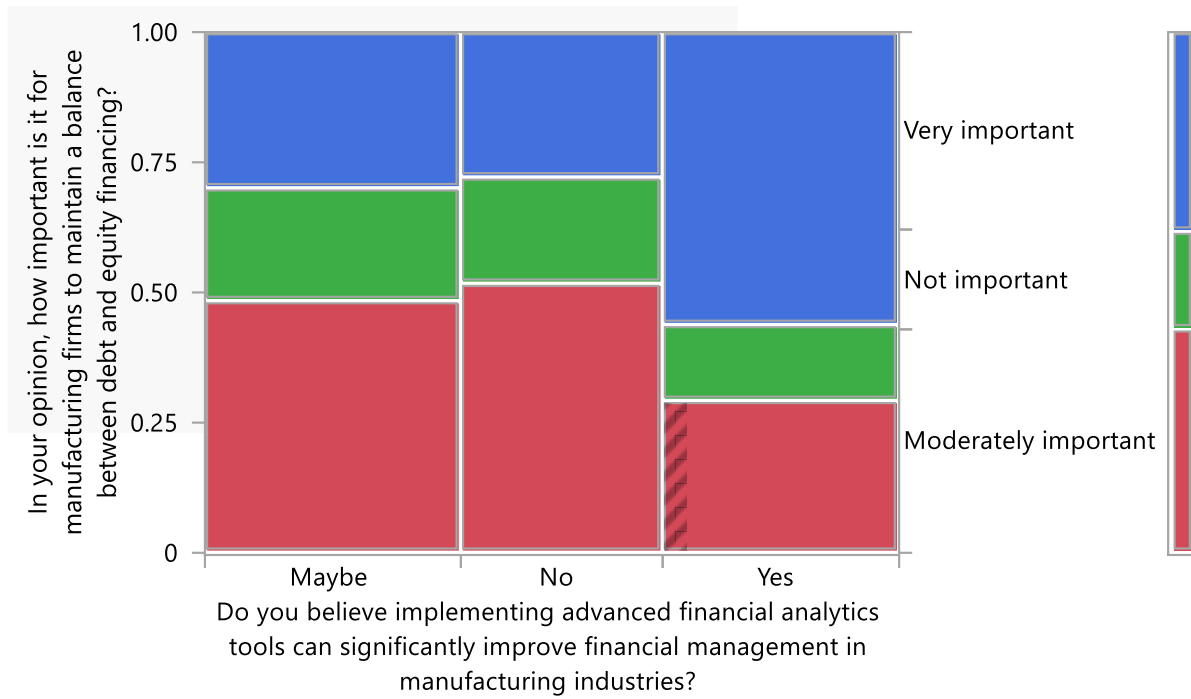
The data suggests that opinions on financial management in manufacturing vary among respondents. They emphasize maximizing shareholder value and utilizing technology, while recognizing the impact of external factors. There's a discussion about prioritizing cost efficiency versus sustainability in supply chain management. Automation is viewed as crucial for boosting productivity, and strategies like digital transformation and innovation are considered necessary for staying competitive in the market.

HYPOTHESIS TESTING (CHI-SQUARE TEST)

HYPOTHESIS-1

- 1) **Null Hypothesis (H0)**: There is no significant association between the perception of implementing advanced financial analytics tools and the importance attributed to maintaining a balance between debt and equity financing in manufacturing firms.
- 2) **Alternative Hypothesis (H1)**: There is a significant association between the perception of implementing advanced financial analytics tools and the importance attributed to maintaining a balance between debt and equity financing in manufacturing firms.

MOSAIC PLOT



Contingency Table

In your opinion, how important is it for manufacturing firms to maintain a balance between debt and equity financing?

Do you believe implementing advanced financial analytics tools can significantly improve financial	Count	Moderately important	Not important	Very important	Total
	Expected				
Maybe	18	8	11	37	
	15.91	7.03	14.06		
No	15	6	8	29	
	12.47	5.51	11.02		
Yes	10	5	19	34	
	14.62	6.46	12.92		
Total	43	19	38	100	

Tests

N	DF	-Log Like	R Square(U)
100	4	3.5242945	0.0322
Test	Chi-square	Prob>Chi-Sq	
Likelihood Ratio	7.049	0.1333	
Pearson	7.110	0.1302	

- Likelihood Ratio Chi-Square: 7.049
- Probability of Likelihood Ratio Chi-Square: 0.1333 (or 13.33%)
- Pearson Chi-Square: 7.110
- Probability of Pearson Chi-Square: 0.1302 (or 13.02%)

In this case:

The p-value for the likelihood ratio chi-square test is 0.1333(or 13.33%), which is more than 0.05.

The p-value for the Pearson chi-square test is 0.1302(or 13.02%), which is also more than 0.05.

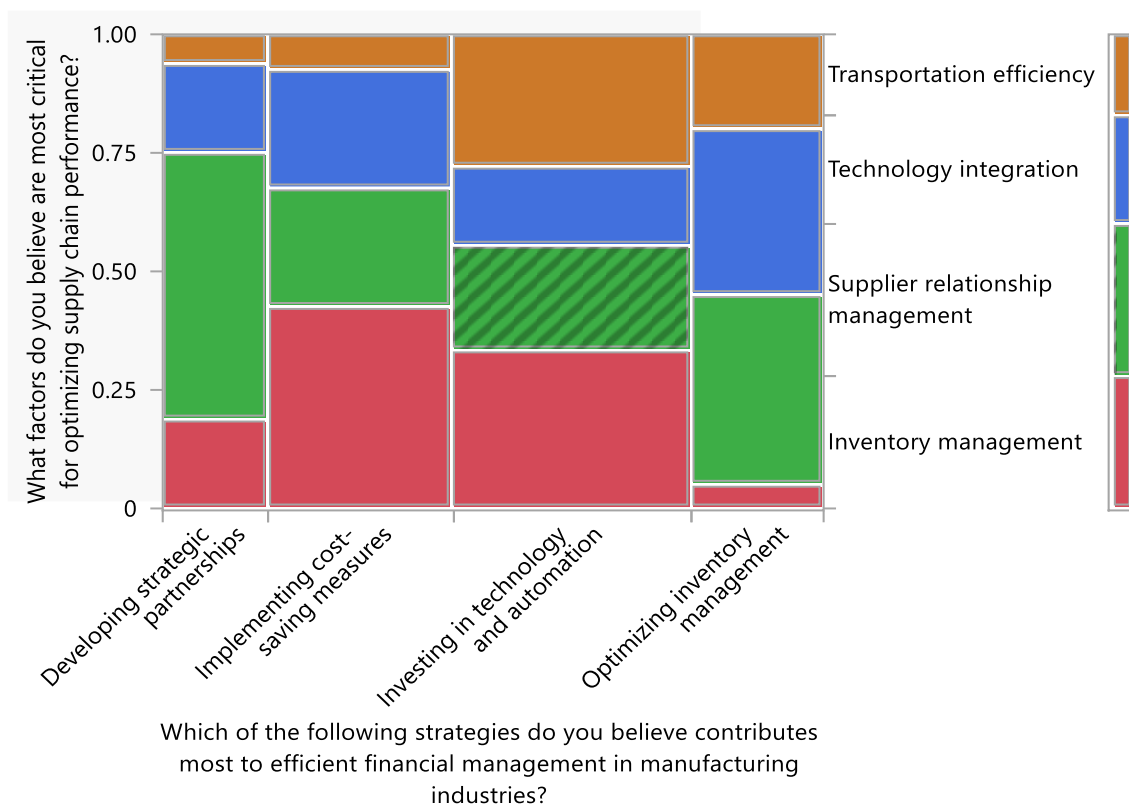
Since both p-values are more than 0.05, we failed to reject the null hypothesis. This suggests that there is no significant association between the perception of implementing advanced financial analytics tools and the importance attributed to maintaining a balance between debt and equity financing in manufacturing firms.

HYPOTHESIS – 2

- 1) **Null Hypothesis (H0):** There is no significant association between the perception of strategies for financial management and the critical factors for optimizing supply chain performance in manufacturing firms

- 2) **Alternative Hypothesis (H1):** There is a significant association between the perception of strategies for financial management and the critical factors for optimizing supply chain performance in manufacturing firms.

MOSAIC PLOT



Contingency Table

What factors do you believe are most critical for optimizing supply chain performance?						
Which of the following strategies do you believe contributes most to efficient financial management in manufacturing industries?	Count	Inventory management	Supplier relationship management	Technology integration	Transportation efficiency	Total
	Expected					
	Developing strategic partnerships	3	9	3	1	16
		4.48	5.12	3.68	2.72	
	Implementing cost-saving measures	12	7	7	2	28
		7.84	8.96	6.44	4.76	
	Investing in technology and automation	12	8	6	10	36
	10.08	11.52	8.28	6.12		
Optimizing inventory management	1	8	7	4	20	
	5.6	6.4	4.6	3.4		
Total	28	32	23	17	100	

Tests

N	DF	-LogLike	RSquare(U)
100	9	10.293788	0.0757

Test	Chi-square	Prob>ChiSq
Likelihood Ratio	20.588	0.0146*
Pearson	18.993	0.0253*

- Likelihood Ratio Chi-Square: 20.588
- Probability of Likelihood Ratio Chi-Square: 0.0146 (or 1.46%)
- Pearson Chi-Square: 18.993
- Probability of Pearson Chi-Square: 0.0253 (or 2.53%)

Both chi-square tests indicate p-values less than 0.05, which is a common significance level. Typically, when the p-value is less than the chosen significance level (e.g., 0.05), we reject the null hypothesis in favor of the alternative hypothesis. This suggests that there is a significant association between the perception of strategies for financial management and the critical factors for optimizing supply chain performance in manufacturing firms.

Therefore, based on the given significance level, we reject the null hypothesis and accept the alternative hypothesis.

Summary of Findings

The survey data provides a comprehensive look at how people in manufacturing industries view financial management, technology adoption, and supply chain optimization. There's a wide range of opinions, but many believe in investing in technology and maintaining good relationships with suppliers. They also think it's crucial to balance cost efficiency with sustainability. There's a strong emphasis on adapting to digital transformation and new technologies, like Industry 4.0, although some are worried about the impact of automation. External factors, like market trends, play a big role in financial decisions, and opinions differ on whether firm size affects financial management practices. Overall, the data shows that financial decision-making in manufacturing is complex, and it's important to consider different perspectives to make effective strategies.

Recommendations

1. Exploration and adaptation of new technology as it advances.
2. Could integrate more sustainable practices into operations to reduce environmental impact.
3. Stay updated on market trends and global events which could impact the company's financial performance

Conclusion

The project showed that manufacturing companies have different ideas about how to manage finances and adopt technology. While many agree on investing in tech and keeping good relationships with suppliers, there are worries about automation and uncertainties about how external factors and company size affect financial decisions. This tells us that managing money in manufacturing is complicated, and we need to look at many things when making decisions.

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