Impact of Capital Budgeting Decisions for Micro- Small & Medium Enterprises of Jajpur

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Abstract—**Capital budgeting for micro, small, and medium enterprises (MSMEs) in Jajpur's ferrochrome sector is critical in growing and keeping the business competitive. Jajpur is a hub for ferrochrome production due to its proximity to raw material sources, but specific requirements and advantages arise for MSMEs operating here. This research seeks to gain a deeper understanding of the capital budgeting decision-making processes in Jajpur's MSMEs, looking at their use of NPV (net present value), IRR (internal rate of return), and payback period methods and the impact of these on profitability, operating performance and market position. This research examines the problems small businesses face in terms of financial limitations, pricing risks, and funding constraints through multiple data sources. The data provides practical suggestions on how these enterprises can improve their capital budgeting process so they can remain sustainable and grow in their industry.**

Index Terms—**MSME, Capital Budgeting Decisions, NPV, IRR, Payback period.**

I. INTRODUCTION

Capital budgeting is a critical process that businesses, particularly micro, small, and medium enterprises (MSMEs), use to evaluate potential investments and determine the best allocation of resources for long-term growth and sustainability. In the ferrochrome industry, particularly for MSMEs located in Jajpur, Odisha, capital budgeting decisions are extremely important. These decisions directly impact the financial stability, efficiency of operations, and competitive position of these businesses, especially in a complex and highly capital-intensive sector.

Jajpur, located in the eastern part of India, is known for its proximity to major iron ore and chromite deposits. Also, it is a major hub for ferrochrome production in India. Ferrochrome is a critical raw material used in the production of stainless steel, which is in high demand domestically and internationally. The presence of several large ferrochrome producers in the region provides a competitive environment. As such, MSMEs in this industry need to make strategic capital budgeting decisions to remain competitive and sustainable.

Capital budgeting helps businesses pick investment options such as buying new equipment building workspace improvements or upgrading their technology. In capital budgeting evaluation determines how well investments perform based on the money at stake. Capital budgeting depends on several analytical tools like NPV, IRR, payback period, and DCF so companies can make effective business choices.

For MSMEs operating in the ferrochrome industry in Jajpur, capital budgeting decisions can have far-reaching consequences. The ferrochrome industry is highly capital-intensive by nature, where setting up production facilities, procuring raw materials, and specialized equipment for the production process entail heavy initial costs. As such, inappropriate investment decisions can lead to financial pressure, inefficiencies in operations, and the worst case, business failure. The topic chosen for the study is therefore contributing to the betterment of the MSME business.

Capital budgeting is a crucial financial decision-making process used by businesses to evaluate and prioritize investment opportunities. For MSMEs (Micro, Small, and Medium Enterprises), especially in industries like ferrochrome production in Jajpur, Odisha, these decisions become particularly important due to the capital-intensive nature of the industry.

II. LITERATURE REVIEW

This review explores existing literature on capital budgeting techniques, particularly the use of Discounted Cash Flow (DCF) methods like **Net** Present Value (NPV) and Internal Rate of Return (IRR), and their relevance and application in the MSME sector, specifically in the context of the ferrochrome industry in Jajpur.

Capital budgeting helps MSMEs prioritize investments in fixed assets, which are crucial for operational efficiency and competitiveness (Hidayah & Ningsih, 2015). Strategic capital budgeting decisions directly affect profitability by optimizing investment in long-term assets, such as machinery and equipment (Jain et al., 2013). By employing various capital budgeting techniques, MSMEs can assess risks associated with investments, enhancing decision-making processes (Og'abek, 2024). Many MSME owners lack formal education in financial management, leading to ineffective budgeting practices (Hidayah & Ningsih, 2015). DCF methods provide a structured approach to evaluate the profitability of MSME projects. For instance, a study on bioplastic products showed an NPV of IDR 15,022,764.59 and an IRR of 84%, indicating strong financial potential (Agung et al., 2023).: DCF methods account for the time value of money, allowing MSMEs to make informed investment decisions over multiple periods (Götze et al., 2015). NPV is often preferred over IRR due to its straightforward interpretation and alignment with financial management objectives. Conflicting results between the two methods can lead to misjudgments, making NPV a more reliable choice (Zhang, 2022). IRR can be misleading, especially when comparing projects of varying scales or cash flow patterns, which is critical for MSMEs with limited resources (Zhang, 2022). While DCF methods are widely recognized for their effectiveness, some argue that their complexity may prevent MSMEs from utilizing them fully. Simplified approaches or alternative methods could be more accessible for smaller enterprises, potentially leading to underutilization of these valuable financial tools.

Research Gap: Limited research was found on the capital budgeting decision in the MSME sector. The research on the CBD of MSME with special reference to the ferrochrome industry of Jajpur, Odisha is very crucial for the betterment of the economic aspect of the MSME sector.

A. Research Methodology

The research methodology for studying the impact of capital budgeting decisions on MSMEs in the ferrochrome industry of Jajpur, Odisha, involves a structured approach that allows for comprehensive analysis and understanding of how MSMEs make capital budgeting decisions and their outcomes. Since the ferrochrome industry in Jajpur is capital-intensive and competitive, understanding the practices and challenges faced by MSMEs is essential for improving their financial management and long-term sustainability.

Research Objectives

The key objectives of the research are:

- To identify the capital budgeting techniques used by MSMEs in the ferrochrome industry of Jajpur.
- To evaluate the impact of these techniques on decision-making, financial sustainability, and profitability.
- To assess the challenges MSMEs face in implementing capital budgeting processes.
- To recommend ways to improve capital budgeting practices among MSMEs in Jajpur to foster growth and competitiveness.

III. RESEARCH DESIGN

This study will adopt a descriptive research design, which is appropriate for understanding the existing capital budgeting practices and their outcomes. The study will primarily focus on gathering both qualitative and quantitative data to assess how MSMEs in the ferrochrome industry in Jajpur manage investment decisions and their impact on financial performance.

A. Data Collection Methods

1 combination of primary and secondary data collection methods will be used to gather comprehensive insights into the impact of capital budgeting decisions on MSMEs.

2. Primary Data:

Surveys/Questionnaires: A structured questionnaire will be distributed to the owners, financial managers, and key decision-makers of MSMEs involved in the ferrochrome production in Jajpur. The questionnaire consists of the following variables:

- Types of capital budgeting techniques used (e.g., NPV, IRR, Payback Period).
- The frequency of capital budgeting decisions and investment projects.
- The impact of these decisions on operational efficiency, profitability, and competitiveness.
- Challenges faced in the budgeting process, such as lack of skilled financial resources, inadequate access to financing, or market volatility.
- The role of external factors such as government policies, global commodity price fluctuations, and competition in influencing capital budgeting decisions.

The information acquired from this survey will shed light on the capital budgeting procedures and difficulties MSMEs in Jajpur's ferrochrome sector confront.

B. Secondary Data:

1. Company Reports and Financial Statements: The financial records of MSMEs in the ferrochrome industry will be reviewed to analyze the historical capital budgeting decisions, their financing strategies, and the outcomes of those decisions (e.g., profitability, return on investment).

Industry Reports and Publications: Government and industry reports on the ferrochrome industry in Jajpur will be used to understand the market dynamics, trends, and external factors affecting capital budgeting decisions. This may include data on raw material costs, environmental regulations, demand for ferrochrome, and export opportunities.

IV. SAMPLING DESIGN

The study adopted a stratified random sampling technique to ensure that MSMEs from various segments of the ferrochrome industry are included. Given the size and diversity of MSMEs, the sample will be categorized based on factors such as:

- Size of the enterprise (micro, small, and medium).
- Annual turnover or capital outflows.
- Type of capital investment (e.g., machinery, expansion, technology, environment-related investments).

The research targeted to survey a sample of 35 MSMEs from the Jajpur region, which includes both established firms and newer entrants into the ferrochrome sector.

V. DATA ANALYSIS TECHNIQUES

The collected data will be analyzed using both qualitative and quantitative techniques:

Qualitative Analysis: Data obtained from interviews and open-ended survey questions will be analyzed using thematic analysis. This will help identify common themes, challenges, and strategies related to capital budgeting decisions, as well as the broader impact on business performance.

Quantitative Analysis: Data from structured survey questions will be analyzed using

Statistical methods: The following statistical methods were used in this research.

Descriptive statistics: To summarize the demographic information, frequency of use of different capital budgeting techniques, and general patterns in capital budgeting decisions.

Correlation analysis: To examine the relationship between the type of capital budgeting technique used (e.g., NPV, IRR) and business outcomes such as profitability, growth, and operational efficiency.

Regression analysis: To assess how capital budgeting decisions affect financial performance indicators (e.g., return on investment, profitability).

V. LIMITATIONS OF THE STUDY

The study on the impact of CBD on MSMSs is crucial but still, there are some limitations in this research these are as follows:

- Sample size: Given the limited number of MSMEs in the ferrochrome industry in Jajpur, the sample size might not fully represent the entire population.
- Access to Data: Obtaining accurate and comprehensive financial data from MSMEs could be challenging due to privacy concerns or lack of detailed financial reporting.
- Bias in Responses: Respondents may provide biased answers, especially if they feel the information could negatively impact their business or reputation.

VI. ETHICAL CONSIDERATIONS

- Confidentiality: All responses and financial data will be kept confidential, and the identities of

participants will not be disclosed.
- Informed Consent: Participants will be fully informed about the purpose of the study and their voluntary participation.
- Transparency: The study will ensure transparency in its findings and avoid conflicts of interest.

A. Expected Outcomes of the study:
This research is expected to provide the following:
- A clear understanding of the capital budgeting techniques used by MSMEs in the ferrochrome industry in Jajpur.
- Insights into how these decisions impact the financial health and growth prospects of MSMEs.
- Identification of key challenges faced by MSMEs in the capital budgeting process and recommendations to improve these practices.
- A better understanding of the role of external factors such as raw material costs, government regulations, and global market trends in shaping capital budgeting decisions.

B. Data Analysis and Interpretation:
1. Descriptive data analysis:
The study surveyed 35 MSMEs in the ferrochrome industry of Jajpur, with the following distribution:
Distribution of MSMEs by Size
Table 1: Distribution of MSMEs by Size

Enterprise category	Number of firms	percentage
Micro	12	34.3%
Small	15	42.9%
Medium	08	22.8%
Total	35	100%

Source: Primary data

The distribution of 35 Micro, Small, and Medium-Sized Enterprises (MSMEs) by size is highlighted in the survey results, demonstrating that small businesses predominate in the industry with 42.9% (15 firms) of the total. 34.3% of businesses are micro enterprises (12 firms), indicating a high number of grassroots companies. The smallest percentage, 22.8%, is made up of medium-sized businesses (8 firms), indicating possible difficulties in scaling operations as businesses get bigger. This distribution highlights the vital role small businesses play in the MSME sector and raises the possibility that specific assistance may be required to improve the trajectory of micro and medium-sized businesses' growth.

Capital Budgeting Methods Utilized
Table 2: Capital Budgeting Methods Utilized

Method used	Number of firms	Percentage
Payback period	31	88.6%
Net present value	18	51.4%
Internal rate of return	15	42.9%
Accounting rate of return	22	62.9%
Multiple methods	21	60.0%

Source: Primary data

The approaches used by businesses to assess investment projects are compiled in the table along with their frequency and relative significance. 31 businesses (88.6%) use the payback period, making it the most widely used approach. This is probably because it is straightforward to implement. 18 businesses (51.4%) utilize the net present value (NPV) method, indicating an emphasis on assessing long-term cash flows and profitability. In a similar vein, 15 companies (42.9%) use the internal rate of return (IRR) method, demonstrating its value in determining the viability of projects. 22 businesses (62.9%) utilize the accounting rate of return (ARR), indicating its popularity for assessing profitability using accounting indicators. Interestingly, 21 businesses (60.0%) use a variety of techniques, indicating a need for a thorough assessment strategy to balance short-term.

The results indicate a strong preference for simpler techniques like the Payback Period, while more sophisticated methods like NPV and IRR show lower adoption rates, particularly among micro-enterprises.

C. Investment Performance Analysis:
Table 3: Project Success Rates by Evaluation Method

Evaluation method	Projects Meeting Target ROI	Projects Below Target ROI
Payback period	65.3%	34.7%

Net present value	78.2%	21.8%
Internal rate of return	76.5%	23.5%
No formal method	45.2%	54.8%

The project performance evaluation techniques show notable differences in reaching the desired return on investment. Projects utilizing the **Payback Period** method met their ROI targets 65.3% of the Challenges in Capital Budgeting Implementation

Table 4: Major Challenges Reported by MSMEs:

Challenges	Severity score (1-5)	% of firms reporting
Limited financial expertise	4.2	82.9%
Market volatility	4.0	77.1%
Access to finance	3.8	74.3%
Raw Material Price Fluctuations	3.7	71.4%
Technology Assessment Difficulty	3.5	65.7%

MSME Businesses in Jajpur face several critical challenges impacting their operations and growth, as highlighted by their severity scores and prevalence among firms. Limited financial expertise emerges as the most severe challenge, with a score of 4.2 and reported by 82.9% of firms, underscoring a widespread skills gap. Market volatility follows closely, scoring 4.0 and affecting 77.1% of Financial Performance Correlation

time, with 34.7% falling short. Similarly, projects assessed with **Net Present Value (NPV)** and **Internal Rate of Return (IRR)** had higher success rates, achieving targets 78.2% and 76.5%, respectively, while falling below targets 21.8% and 23.5%. In contrast, projects without a formal evaluation method performed the poorest, with only 45.2% meeting target ROI, and 54.8% failing to do so. This emphasizes the importance of structured financial evaluation techniques for project success.

businesses. Access to finance is another significant hurdle, with a severity of 3.8, impacting 74.3%. Additionally, raw material price fluctuations (3.7 severity) affect 71.4% of firms, while technology assessment difficulty, though slightly less severe at 3.5, is still a concern for 65.7% of organizations. These challenges collectively highlight critical areas requiring strategic focus and targeted interventions.

Table 5: Correlation between Capital Budgeting Sophistication and Financial Performance

Performance Metric	Correlation Coefficient	p-value
Return on Investment	0.685	0.008
Profit Margin	0.573	0.012
Operational Efficiency	0.492	0.015
Market Share Growth	0.438	0.023

The information, which came from primary research, shows how businesses evaluate investments. The payback period is the most popular approach, with 31 businesses (88.6%) choosing it for its ease of use and speedy evaluations. 22 businesses (62.9%) use the accounting rate of return (ARR), demonstrating its dependence on accounting profitability. Approximately 60.0% of businesses (21) use a variety of approaches, suggesting a need for thorough assessment. While the internal rate of return (IRR), which is utilized by 15 firms (42.9%), emphasizes its role in determining project feasibility, the net present value (NPV) method, which is employed by 18 firms

(51.4%), emphasizes attention to long-term financial viability. A balanced approach to both conventional and contemporary evaluation methods is suggested by this distribution.

VII. KEY FINDINGS

1. Method Adoption Patterns:
- 88.6% of surveyed MSMEs use the Payback Period method, making it the most commonly adopted technique
- Only 51.4% utilize NPV analysis, despite its theoretical superiority

- 60% of firms use multiple evaluation methods for major investments

2. Performance Implications:

- Projects evaluated using NPV showed the highest success rate (78.2%)
- Firms using formal capital budgeting methods demonstrated significantly better financial performance
- Strong positive correlation (r = 0.685) between sophisticated capital budgeting practices and ROI

3. Implementation Challenges:

- Limited financial expertise emerged as the most severe challenge (4.2/5)
- Market volatility and access to finance were rated as significant barriers
- Technology assessment difficulty particularly affects micro enterprises

4. Size-Based Analysis:

- Medium enterprises show higher adoption rates of sophisticated methods (75%)
- Micro enterprises primarily rely on the Payback Period (91.7%)
- Positive correlation between firm size and capital budgeting sophistication

These findings suggest that while simpler capital budgeting methods dominate Jajpur's ferrochrome MSMEs, firms employing more sophisticated techniques generally achieve better investment outcomes. The research indicates a clear need for capacity building in financial analysis and decision-making tools, particularly among micro and small enterprises.

VIII. CONCLUSION

This research shows how choosing projects influences MSMEs' financial condition, operational performance, and market standing in Jajpur's ferrochrome industry. Easy-to-use Payback methods win popularity but companies that apply NPV and IRR methods achieve better financial results such as higher returns and profitability. The study finds that financial expertise problems market instability and finance limitations make it hard for businesses to use advanced budgeting strategies properly. Micro and small companies struggle more with these obstacles so they require special training programs and government action to help them. When MSMEs in Jajpur resolve those particular problems, they can use better capital budgeting methods to keep their enterprise successful and growing.

Accurately measuring financial risks in investments plus improving financial knowledge would help enterprise owners choose better projects for future success. More research should examine different business sectors to show us how to solve these performance problems.

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