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Financial Performance and Profitability Assessment of Mini Cement Plants in northeast India

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Abstract: The Indian Cement Industry is one of the eight core sectors of the Indian economy. A total of 210 large cement plants together account for 410 million tonnes of installed capacity in the country, while 350 mini cement plants make up the rest of the estimated capacity of around 11.10 MT (IBEF, 2017). Cement is one of the most promising sectors and the north-eastern states of India are likely to be the newer and virgin markets for cement companies and could contribute to the bottom line in future. With the increasing demand for cement in the market, several private entrepreneurs roped in the cement industry of Northeast India. The rising opportunities in the cement sector motivated the small entrepreneurs to join in by setting mini cement plants to serve the local markets of their areas. But to withstand the intense competition in the cement industry, the financial performance of the mini cement plants must be strong enough to sustain.

The paper aims to study the financial performance and profitability status of the Mini cement plants of the northeast India. The analysis focuses on determining the critical financial indicator of profitability ratio for evaluating operational efficiency and financial health of the subjects. It also evaluates the financial soundness and future prospects of the selected plants by using the parameters of Net Profit and Cumulative Profit Estimation.

Keywords: cement industry, mini cement plant, profitability, net profit, financial performance, northeast India, financial sustenance

INTRODUCTION

Cement Industry is one of the most potent industries of the world and is referred to as the basic industry for accelerating development and enhancing employment generation capacity of a region. This mineral based industry ranks next only to Steel in construction material and forms the bedrock of all modern infrastructures. In fact, the per capita consumption of cement is taken as an important indicator of the industrial vitality of a country. The economic significance of the cement industry is evident from its long and diversified supply chain that contributes 5.4 per cent of global GDP and 7.7 per cent of global employment (Schlorke 2020).

India is the second largest producer of cement in the world following China (IBEF, 2019). In fact, both these countries represent almost 90% of the global cement market. With 537 million metric tonnes per year (MTPA) of cement production capacity as of 2020-21, India accounts for over 8 percent of the global installed capacity of cement. (CMA Reports, 2022). The Indian cement industry uses the most modern and world-class technology and is a very promising manufacturing segment. Cement is an important part of our industrial infrastructure, providing direct and indirect employment to many people and contributes a major part to GDP. In FY20, the production of cement stood at 330 million metric tonnes (IBEF,2022). Of the total capacity, 98 percent lies with the private sector and the rest with the public sector. A total of 210 large cement plants together account for the huge installed capacity in the country, while 350 mini cement plants make up an estimated capacity of around

11.10 MT. The top 20 companies account for around 70 per cent of the total production (DIPP, 2022). The Indian Cement Industry is expected to continue its fast-paced growth and attain installed capacity of 850 MT by 2030.

Mini Cement Plants

As per the Excise Notification no.4/2007- Central Excise dated 1st March 2007 "Mini Cement Plant" means:

i)a factory using vertical shaft kiln, with installed capacity not exceeding 300 tonnes per day or 99,000 tonnes per annum and the total clearances of cement produced by the factory, in a financial year, shall not exceed 1,09,500 tonnes, or

ii) a factory using rotary kiln, with installed capacity not exceeding 900 tonnes per day or 2,97,000 tonnes per annum and the total clearances of cement produced by the factory, in a financial year, shall not exceed 3,00,000 tonnes.

Like other small-scale industries, mini cement plants possess distinctive features that set them apart from large-scale plants. They offer a range of socio-economic benefits, including the promotion of regional development, generation of employment opportunities, and optimal utilization of locally available resources such as capital, labour, technology, and raw materials. Most mini cement plants utilize the modern dry process for cement manufacturing, which is not only energy-efficient but also complies with environmental protection standards.

Additionally, the lower investment cost and shorter gestation period compared to large-scale plants make mini cement plants especially attractive to small entrepreneurs. The quick returns on investment facilitate a faster pace of economic growth, contributing significantly to the industrial and socio-economic advancement of the regions in which they are established.

The northeastern region of India, including Assam, is richly endowed with key raw materials required for cement production, such as limestone and coal, along with adequate power supply and abundant labor resources. These favorable conditions led to the emergence of several mini cement plants in the state during the early 2000s.

Most of these plants are concentrated around Jorabat—the border area between Assam and Meghalaya—as well as in regions surrounding Karbi Anglong and North Cachar Hills, particularly within the districts of Nagaon and Hojai of Assam.

Strategically located in the heart of Assam (India), Nagaon district occupies a central position in the northeastern region of the country. It is widely recognized for its expansive cement market and a booming construction sector, which has driven the establishment of numerous mini and large-scale cement plants in and around the area. The construction sector in Nagaon not only supports regional infrastructure development but also serves as a lucrative and convenient market for nearby cement manufacturers, thereby reinforcing the industrial landscape of the region. At present, 2 out of 6 large-scale and 5 out of 12 mini cement plants of Assam are in the Nagaon-Hojai districts.

Profitability

Profit is the soul of a business. The extent to which a business can thrive and grow depends upon its profitability. This yardstick helps in determining the operational efficiency and controlled performance of the Mini cement plants along with the ability to sustain the intense competition prevailing in the cement industry.

REVIEW OF LITERATURE

Tipuric (2002) stated that the profitability of a firm is directly related to the size of the firm, that is, the larger the firm, the larger the profits and vice versa. **Raj and Mahapatra (2009)** reported that the major impediments for the productivity of small-scale sector are the capacity utilization**,** manpower problems and gaps in the marketing and distribution strategy etc. **Mulgund (1992)** added that though a large plant is superior in economies of scale, but in terms of cost of investment and gestation period, the mini cement plants find themselves at an advantageous position. **Manoharan (2002)** undertook an analytical study on the profitability of Indian Cement Industry and stated that quality of management and liquidity factor affect the quality of earnings of a firm. According to **Mrs. Sudha Bagla (2003)**, although the Indian cement industry is self-sustaining and capable of meeting the country's rising infrastructural demands, there are many factors that impair the growth of the industry. The industry suffers from the burden of heavy taxation in terms of Excise Duty, Sales Tax, Royalty on limestone and other raw materials and other taxes like Octroi, Electricity Duty, Entry Tax etc. which account for almost 35-40% of the sale price. **Sujit (2003)** stated that the profitability of Indian cement industry depends upon the efficiency of the firm. **Rasik N. Bavaria (2004)** undertook a comparative analysis of the Performance and Liquidity performance of 17 selected cement companies for the period 1995-96 to 2002-03 and reported that the industry is operating with less profitability. To increase the same, he suggested that the management should make efforts to control the cost of goods sold and the operating expenses. **Ikram et al. (2011)** studied the relationship between working capital management and profitability of 14 cement companies of Pakistan and concluded that both these factors are moderately related to each other. According to **Narayana R T and Rajesh M (2013)** the growth of cement industry is not proportional to the potential demand of cement. Their study identified certain constraints such as, cost reduction, control, taxes, modernization etc. that act as impediments for the efficiency of the cement companies. **Biswal K.C and Lyngdoh Y.B(2014)** analysed the financial structure of Mawmluh Cherra Limited, a major cement company of Meghalaya for a period of 10 years from 2003-2013 and settled with improper utilization of working capital and poor inventory management. The study recommended optimum production and sales at minimum risk and cost to bring in efficient management of working capital and enhancement of profitability. **Gopi K.T. (2018)** reported of diminishing profitability of leading cement companies during 2006-2015.

Ehiedu (2014) while investigating the influence of firm's liquidity on its financial performance revealed that liquidity showed a statistically significant positive influence in terms of profit growth of the firm. A firm with sufficient liquid resources can perform its operations with much efficiency and less constraints. **N Chandrakala (2019)** reported that the cement industry is expected to grow with rising demand, increased construction and technological developments.

Research Gap

The review of the literature related to the study shows that despite the availability of a number of studies on cement production and the profitability of industry, no relevant study has been found on the profitability status and financial viability of mini cement plants. Besides, no relevant literature has been encountered with, that can illuminate the status of mini cement plants in the economy of North-Eastern States including Assam. The present study is influenced by the need to fill these gaps. It would pave the way for some pertinent information to be highlighted on the profitability of the mini cement plants as well as contribute towards driving them to a more efficient existence.

RESEARCH METHODOLOGY

Objectives

To examine the financial performance of the selected mini cement plants under study.

Research Queries

Whether the financial performance of the mini cement plants is strong enough to sustain?

Universe

The universe of the study consists of the mini cement plants of northeast India.

Sample

The five mini cement plants of Nagaon-Hojai districts of Assam have been selected for the study.

Table1. Names and Respective Brands of MCPs

Name of the Company	Name of the cement brand produced
RJ Cement	R J Cement
Bulland Cement Pvt Ltd.	Prithvi Cement
Aditi Industries	Atibal Cement
Dragon Cement Industries Pvt Ltd	National Cement
KD Cements	Suraksha Cement

Sampling method

The choice of sample is based on the convenience and accessibility for the researcher, ensuring effective data collection and comprehensive understanding.

Sample Design

The selection of sample units is based on the following criteria:

1. Mini cement plants operational in Assam.
2. Plants that began operations prior to 2015, ensuring a minimum of five years of data within the study period.
3. Plants where cement manufacturing is the core activity.

According to Industrial Reports (2020), Assam has twelve operational mini cement plants. Out of these, five plants—three from Hojai and two from Nagaon—have been purposively selected, constituting approximately 42% of the total. The sample was constrained by the availability and accessibility of data.

Period of Study

The period of study is 10 years i.e. 2010-11 to 2019-20.

Data collection

Primary data have been collected using a semi-structured questionnaire that was directly administered to the management of the plants. Secondary data has been collected from the annual reports of the companies and other related sources.

Tools and Techniques of Analysis

The analysis focuses on determining the critical financial indicator of profitability ratio, for evaluating operational efficiency and financial health of the subjects. To evaluate the financial soundness and future prospects of the selected plants, the following parameters have been used:

Net Profit and Cumulative Profit Estimation and Profitability Ratio

Net profit serves as a critical measure of the financial health, profitability, and cost management efficiency of a mini cement plant. A higher net profit indicates better control over expenditures in relation to income, while a declining or negative profit highlights potential inefficiencies or increased cost pressures that may hinder long-term sustainability and growth.

Cumulative Profit Estimation

Cumulative profit is obtained by summing the net profits from the base year (2010) up to a given year n. This provides a long-term view of the financial performance of a mini cement plant, taking into account year-on-year profitability or losses.

$$Cumulative\ Profit = \sum_{i=2010}^{n} Net\ Profit_i$$

Cumulative profit serves as an indicator of the plant's financial resilience and long-term sustainability. A consistently increasing cumulative profit demonstrates steady financial growth and operational success. In contrast, stagnant or negative cumulative profit values highlight persistent losses, suggesting challenges in cost control, revenue generation, or overall business strategy.

Profitability Ratio

The **Profitability Ratio** measures the percentage of revenue that remains as profit after all expenses have been deducted. It is calculated using the following formula:

$$Profitability\ Ratio = \left(\frac{Net\ Profit}{Revenue}\right) \times 100$$

This ratio expresses net profit as a percentage of total revenue, helping evaluate how efficiently a mini cement plant converts its income into actual profit. A **higher profitability ratio** indicates that a larger portion of revenue is retained as profit, reflecting better cost control and operational efficiency. This ratio is particularly valuable for comparing financial performance across plants of varying sizes.

Findings are presented using:

- Tables: For comparative year-wise financial performance
- Graphs/Charts: To show trends of profitability

Data Analysis

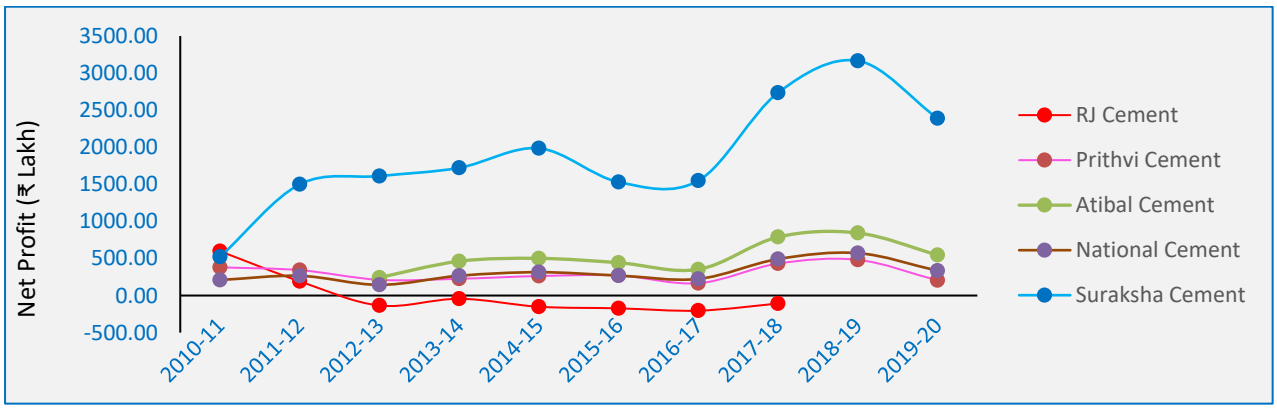
The Net Profit and Cumulative Profit for the period of study for the 5 mini cement plants is as under:

Table 2: Net and Cumulative Profit Analysis of Mini Cement Units (2010–11 to 2019–20)

Year	RJ Cement		Prithvi Cement		Atibal Cement		National Cement		Suraksha Cement	
	Net Pr (₹ in cr)	Cu Pr (₹ in cr)	Net Pr (₹ in cr)	Cu Pr (₹ in cr)	Net Pr (₹ in cr)	Cu Pr (₹ in cr)	Net Pr (₹ in cr)	Cu Pr (₹ in cr)	Net Pr (₹ in cr)	Cu Pr (₹ in cr)

2010-11	5.97	5.97	3.80	3.80	-	-	2.09	2.09	5.23	5.23
2011-12	1.91	7.88	3.42	7.22	-		2.65	4.74	15.00	20.23
2012-13	-1.34	6.54	2.11	9.33	2.42	2.42	1.44	6.18	16.11	36.34
2013-14	-0.43	6.11	2.25	11.58	4.62	7.04	2.66	8.84	17.22	53.56
2014-15	-1.51	4.60	2.63	14.21	5.01	12.05	3.14	11.98	19.85	73.41
2015-16	-1.72	2.88	2.70	16.91	4.42	16.47	2.69	14.67	15.30	88.71
2016-17	-2.04	0.84	1.66	18.57	3.52	19.99	2.24	16.91	15.50	104.21
2017-18	-1.07	-0.23	4.31	22.88	7.89	27.88	4.92	21.83	27.35	131.56
2018-19	-	-	4.81	27.69	8.43	36.31	5.72	27.55	31.65	163.21
2019-20	-	-	2.04	29.73	5.47	41.78	3.34	30.89	23.90	187.11
Total	-0.23		29.73		41.78		30.89		187.11	

Figure 1: Net Profit Trends of Mini Cement Units (2010–11 to 2019–20)



Interpretation:

The financial health analysis of the five selected mini cement units — RJ Cement, Prithvi Cement, Atibal Cement, National Cement, and Suraksha Cement — over the period from 2010–11 to 2019–20 reveals significant variation in their profitability trends and overall financial stability (Table 2 and Figure 1). RJ Cement exhibited a steep decline in performance, recording continuous net losses from 2012–13 onward, eventually resulting in a negative cumulative profit of ₹ -23 lakh by 2017–18. This pattern indicates severe financial distress, suggesting critical operational inefficiencies or market challenges, leading to the cessation of its reporting thereafter. In contrast, Prithvi Cement maintained a consistent growth trajectory with steady positive net profits every year, culminating in a cumulative profit of ₹ 29.73 crore by 2019–20. This reflects healthy and stable financial management despite minor fluctuations. Atibal Cement demonstrated strong improvement particularly after 2016–17, achieving a significant cumulative profit of ₹ 41.78 crore by 2019–20, thereby positioning itself as a robust and growing entity. National Cement, while exhibiting more moderate annual profits, maintained steady growth across the years, achieving a cumulative profit of ₹ 30.89 crore, indicating financial resilience and operational consistency. Suraksha Cement emerged as the dominant player among the five, showcasing exceptional financial performance with rapid growth, especially after 2016–17, reaching an impressive cumulative profit of ₹ 187.11 crore by 2019–20. Its outstanding profitability points to superior operational efficiency, market capture, and strong financial management. Furthermore, the transition to the Goods and Services Tax (GST) regime in July 2017, which reduced the applicable tax rate from 30% to 28%, appears to have positively influenced the net profitability of most units, although RJ Cement did not benefit from this regulatory change. These findings collectively highlight the divergent financial trajectories of mini

cement plants in Assam, emphasizing the need for strategic operational improvements for weaker units and expansion opportunities for the stronger performers.

Table 3: Profitability Ratio of Selected Mini Cement Plants (2010–11 to 2019–20)

Year	Profitability Ratio				
	RJ Cement	Prithvi Cement	Atibal Cement	National Cement	Suraksha Cement
2010-11	30.72	23.43	-	36.18	41.56
2011-12	11.85	23.08	-	38.58	44.64
2012-13	-16.87	20.22	37.66	33.04	44.61
2013-14	-5.71	21.44	41.94	37.84	44.59
2014-15	-19.65	25.08	43.93	41.29	46.84
2015-16	-24.63	25.34	43.54	40.22	46.75
2016-17	-46.30	23.59	44.41	41.19	48.44
2017-18	-10.27	30.22	48.16	45.78	50.34
2018-19	-	33.72	49.93	48.83	52.49
2019-20	-	29.42	49.08	45.72	52.04

Figure 2: Profitability Ratio Trends of Mini Cement Plants (2010–11 to 2019–20)

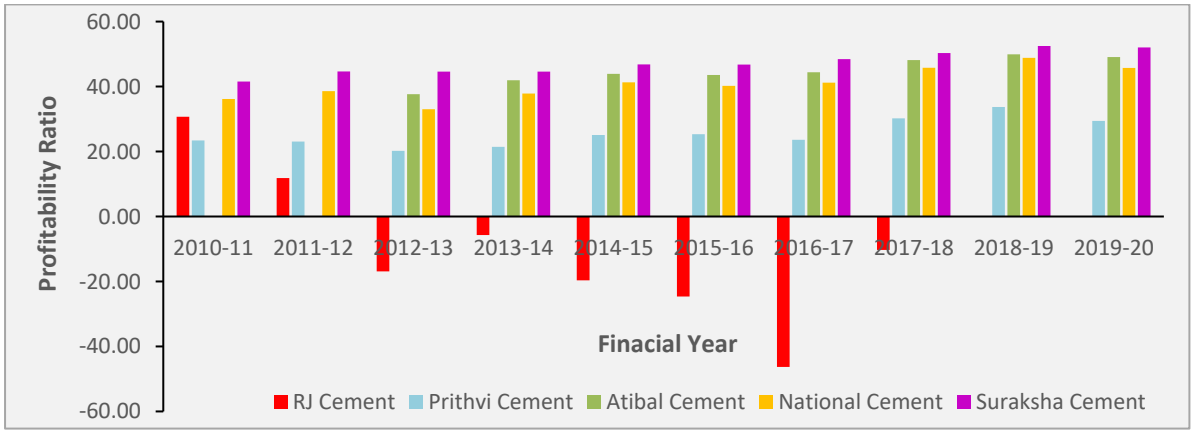


Table 4: Average profitability of the plants for the period (2010-11 to 2019-20)

Name of the brand	Average profitability
RJ Cement	-10.1075
Prithvi Cement	25.554
Atibal Cement	44.831
National Cement	40.867
Suraksha Cement	47.23

Interpretation:

The profitability ratios of the five mini cement plants—RJ Cement, Prithvi Cement, Atibal Cement, National Cement, and Suraksha Cement—over the period 2010–11 to 2019–20 reveal significant variations in financial performance. RJ Cement initially showed a positive profitability ratio of 30.72% in 2010–11; however, it experienced a sharp decline, recording negative profitability from 2012–13 onwards, reaching a low of -46.30% in 2016–17. Although there was some improvement by 2017–18, RJ Cement continued to struggle, indicating persistent financial instability. In contrast, Prithvi Cement maintained a stable and moderately improving profitability ratio throughout the period, growing from 23.43% in 2010–11 to 33.72% in 2018–19. Atibal Cement consistently achieved high profitability, with ratios increasing from 37.66% in 2012–13 to 49.93% in 2018–19, reflecting strong financial performance. National Cement also demonstrated steady growth, with its profitability ratio rising from 36.18% in 2010–11 to 48.83% in 2018–19, indicating an overall strengthening of operational efficiency. Suraksha Cement outperformed all other plants, starting with a high profitability ratio of 41.56% in 2010–11 and continuously improving to reach 52.49% in 2018–19. The data clearly highlight that while RJ Cement faced severe challenges, Prithvi Cement showed moderate improvement, and Atibal, National, and Suraksha Cement maintained strong and growing profitability, with Suraksha Cement emerging as the most financially efficient plant among the five.

Thus, RJ Cement exhibited a steep decline in performance, recording continuous net losses from 2012–13 onward, eventually resulting in a negative cumulative profit by 2017–18. This pattern indicates severe financial distress, suggesting critical operational inefficiencies or market challenges, leading to the cessation of its reporting thereafter.

Suraksha Cement emerged as the dominant player among the five, showcasing exceptional financial performance with rapid growth, especially after 2016–17, reaching an impressive cumulative profit of ₹ 187.11 crore by 2019–20. Its outstanding profitability points to superior operational efficiency, market capture, and strong financial management.

Profitability Status of Mini Cement Plants

The profitability status of mini cement plants indicates that most of them operate as self-sustaining units. Their contribution to the economy—through employment generation, tax revenues, and regional development—is significant and should not be overlooked. While some units face challenges such as liquidity constraints, weak market presence, limited promotional efforts, or inefficient management, the majority are functioning satisfactorily and maintaining stable operations.

Conclusion

The technology demands some economically viable, technically feasible and ecologically beneficial changes to deal with it. The Mini Cement plants offer the desired solution in the field of cement manufacturing. With the increasing demand for this wonder material, the mini cement plants are emerging as the counterpart of large plants in making cement available in the remotest locality.

However, the book and records of the companies have been found to be poorly maintained. Due to the lack of systematic documentation, expenditure details were often unavailable, resulting in challenges in preparing accurate financial accounts. This indicates a pervasive issue of financial mismanagement within the enterprises. Also, there exists prolonged operational inefficiencies in the plants. While initial operational challenges are expected in any new enterprise, it is unacceptable for such teething problems to persist beyond the commencement of commercial production. Given the high regional demand for cement, the plants are expected to perform profitably and must capitalize on the significant supply-demand gap in the region.

The northeastern states of India are characterized by abundant labor but limited capital resources. Therefore, labor-intensive industrialization is more suitable for the region's development. MCPs operate with minimal capital and utilize the available labor force effectively. By employing a large number of people, they facilitate more equitable distribution of income, thereby contributing to economic equality. By encouraging local entrepreneurship and optimum utilisation of locally available resources, they can shape a concrete economy for the not so developed regions like North-east India.

Limitations of the Study

- Data availability was a significant challenge due to non-disclosure or limited disclosure of financial information by privately held companies.
- The study was restricted to five plants due to access limitations, which may affect generalizability.

Scope for future study

The paper focuses only on the profitability of Mini cement plants. It therefore leaves scope for analysis of the viable existence of the mini cement plants vis-à-vis the large manufacturing units amidst the surging competition along with the sustainable manufacturing practices of the mini cement plants.

Declarations

- **Funding**
  This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.
- **Conflicts of interest**
  The authors declare that they have no conflict of interest.
- **Consent for publication**
  The authors consent to the publication of this manuscript.
- **Availability of data and materials**
  The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.
- Informed consent in verbal form has been acquired from all research involving human participants.

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