

Rice Mills and Their Contribution to Local Financial Development: A Case Study of Dhamtari District

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Abstract

Rice milling business is a central element of economic and financial growth of Indian agricultural lands. This paper is an attempt to examine how rice mills contribute to the financial development and general development of the Dhamtari District between 2017 and 2022. The analysis of the revenue generation, job creation, investment trends, and efficiency of the rice milling industry, is conducted using a mixture of primary data gathered at sampled rice mills and secondary data derived through government reports, financial reports, and publications by the industry. The results show that rice mills have a strong positive impact on the level of income in the region, they create job opportunities and lead to the economic stability of the region. Other challenges that the study has found to be a hindrance in growth include changes in price of raw materials, compliance with regulation and technology constraints. Some of the recommendations made are the adoption of modern milling technologies, enhancing the financial management practices and making supportive policies to ensure the sector plays a significant role in the regional development. The study can be of great benefit to the policymakers, entrepreneurs, and stakeholders who would focus on improving the financial performance of rice mills in Dhamtari District and other agrarian economies.

Keywords: Rice Mills, Financial Growth, Economic Development, Dhamtari District, Employment, Investment, Regional Economy

Introduction

The rice milling sector constitutes an important part of the Indian agricultural and industrial environment since it establishes a linkage between the primary agricultural output and value-added food processing. India ranks among the highest manufacturers and consumers of rice in the world, and rice mills are not only important in processing rice, but also have other important roles in revenue generation, facilitating employment, and the general growth of the region. The rice mills are not only a source of sustainable way of livelihood to the farmers and the workers, it is also important in the stabilization of the local economy through downstream business opportunities such as packaging, transportation and marketing. In agricultural states such as Dhamtari District where agriculture is the main source of livelihood, the milling of rice has become a leading cause of financial development in that both the farmers and entrepreneurs in the state enjoy the value chain of economic growth related to rice production and processing.

Dhamtari District is a place located in the state of Chhattisgarh, which is characterized by the fertile territory and large-scale rice plantation. The district has experienced significant growth over the past few years in rice milling industry as a result of rising demand of rice not only in the state but the neighboring areas. Between 2017 and 2022 has been especially prominent with the advent of the modern milling technologies and the enhancement of the supply chain

management and the increasing penetration of the financial and digital services. The developments have helped rice mills to carry out their business more effectively, increase capacity, and earn more revenues thus contributing to the financial growth of the district. The growth of the sector has been a trickle effect to the local employment in that it does not only offer employment in the milling operations but also in the related industries like the storage, distribution and transportation sectors. This has in its turn boosted the household income, purchasing power as well as regional trade.

Although the role of rice mills in the local financial development has been crucial, it is not exhaustively covered in scholarly literature especially in Dhamtari District. The current literature is mainly inclined to the agricultural production, optimization of the crop yield, or the policy frameworks concerning the food processing industries. Nevertheless, very few empirical studies have been performed to investigate the economic role of rice mills in generating revenue, creating employment opportunities, and investing in the region, as well as its contribution to the financial stability of the region. Knowledge of these dynamics can help stakeholders such as policymakers, entrepreneurs, and financial institutions to develop specific interventions that can stimulate sustainable development and improve the socio-economic welfare of the local population.

The rice milling industry in Dhamtari has a number of issues, which affect its contribution to financial development. The variable price of paddy, reliance on the risk of monsoons, and unreliable chains of supply may impact operational efficiency and profit margins. Also, the regulatory compliance, taxation policies and availability of modern technology are major determinants of financial performance of the sector. The financial limitations are the reason why small and medium-sized rice mills are not able to integrate into the modern world with modern equipment and digital solutions, as they may not be able to expand their activities and earn maximum profits. To solve these problems, it is necessary to have an integrated conceptualization of the operational, financial, and socio-economic forces that affect the rice milling industry.

Moreover, rice mills not only affect the financial sector of the local economy but also have the social development effect, i.e., they provide jobs to unskilled and semi-skilled people, encourage the growth of entrepreneurship among the local people and increase the economic stability of the community to the local level. The multiplier effect of the sector is spread to the complementary businesses like transporting services, packaging industries and the retail market thus forming an ecosystem that sustains both the rural and urban economy. Through financial contribution of rice mills in Dhamtari District, this study aims to bring forward the interrelationships between industrial activities and development of the region and as such, a guideline to improving economic sustainability and the formation of policies.

In short, rice milling business is an important driver of financial development and regional growth in Dhamtari District. The time frame between 2017 and 2022 will be an excellent opportunity to learn about the performance of the sector, its problems, and its socio-economic impact in its entirety. The study seeks to fill the gap in the current literature by offering empirical findings on the role of the rice mills in the financial development of the localities. In such a manner, it does not only provide the economic importance of rice mills but also provides

lessons, which the stakeholders can adopt to achieve sustainable growth, better income stability, and economic prosperity in the district. This study is likely to inform policy makers, the industry actors and community based organizations to develop a more resilient and financially sustainable rice milling ecosystem in Dhamtari District and other agrarian based areas.

Literature Review

The technological, economic, and social implication of the rice milling has been researched to a great extent in various regions. Jagbir Rehal (2017) investigated how milling parameters determine the recovery of head rice, which revealed that the quality and quantity of milled rice is greatly influenced by most of the operational parameters. The study focuses on the technical side of the rice milling that is vital in determining the productivity and the financial performance of rice mills. On the same note, Keiji Saika and S.W. (2017) have presented the process of making rinse-free rice in the form of bran-grind, which has come out with innovations in the processing technique that could maximize the efficiency as well as reduce losses after processing.

Another area of concern is the spatial distribution of the rice mills and paddy fields. K. Munibah et al. (2019) examined the spatial information of paddy farms and rice mills by revealing that the geographic distance between the production and processing units are important in lowering the cost of transport and enhancing the efficiency of operations. This corresponds to the results of the Journal of Agricultural and Veterinary Science (Munibah et al., 2019), which stated that the optimal positioning of mills leads to productive results and the promotion of the local economy.

Comparative and economic analyses of the rice milling have given an insight into the economic implication of money to the operators and communities. A comparative analysis carried out by M.K. Shwetha and S.B. (2011) on conventional and modern rice mills in Karnataka showed that the modernized mills produce greater economic returns since they are more efficient, less wastage, and better quality products. Kumar S.P. (2013) and Mistry B. (2016) discussed the use of rice husband and its industrial usage, which proves that the by-products of rice processing can be used as extra sources of revenues, thereby helping to become financially sustainable.

Occupational health and welfare of workers have also been extensively researched. In their study, K.R.M. Chandrathilaka and S.R. (2018) compared work conditions in automated and non-automated Sri Lankan rice mills and concluded that automation enhances organizational efficiency, but attention is to be paid to the working conditions. In the same manner, Mohan Adarbastwar and B.R. (2016) reviewed the incidence of musculoskeletal disorders among the rice mill workers, with the emphasis put on the occupational risk factors that may influence the productivity and stability of the workforce. Naima Sultana and M.S. (2014) have talked about the role women play in rice mills in Sherpur referring to the aspects of social and economic growth of female labor in the sector, especially in promoting household earnings and civic advancement.

Mohammed Ahiduzzaman and A.K. (2009) have reported on the use of energy and the environment of milling rice where they evaluated the energy efficiency and environmental impact of rice processing industries in Bangladesh. Energy efficiency does not only lower the operating costs but also boosts financial sustainability of the mills as well as minimizing the ecological effects. In a study by Nagendra Prasad M.N. and S.K. (2011) into the health benefit of rice bran, it was found that value added products can open new market segments, diversify the sources of income and also make mills to be financially strong.

Kunihiro Tokida and Y.H. (2014) explored the history and future of the rice milling business in Uganda with the focus on policy support, technology uptake, and market expansion as the key drivers of business growth on a global scale. All these studies prove that the rice milling industry plays an important role in the local economic growth, generation of income and employment as well as technological advancements and value addition processing improves financial performance.

In sum, literature suggests that although the profitability of rice mills is mainly dependent on technical efficiency, the spatial optimization, and modernized operations, social factors, including the involvement of the workforce, health issues at work, and the inclusion of the genders are crucial. Nevertheless, a gap in thorough research that incorporates economic performance, social effects and use of technology and local development especially in a particular district such as Dhamtari still exists. It is critical to fill this gap to appreciate the overall role of rice mills in the financial development of the region and to come up with specific interventions to serve the interests of the industrial performance and community wellbeing.

Objectives of your study

1. To assess the income patterns of selected rice mills in Dhamtari District.
2. To identify the challenges faced by rice mills in maintaining financial stability.
3. To analyze the impact of legal and regulatory frameworks on the operations of rice mills.

Hypothesis (H_0 and H_1):

- **H_0 (Null Hypothesis):** There is no significant impact of operational, financial, and regulatory challenges on the financial stability of rice mills in Dhamtari District.
- **H_1 (Alternative Hypothesis):** Operational, financial, and regulatory challenges significantly affect the financial stability of rice mills in Dhamtari District.

Research Methodology

The current research is based on descriptive and analytical research design to investigate the role of rice mill in financial growth and development in Dhamtari District between 2017-2022. The study is largely based on mixed research method, which involves the use of primary data and secondary data. The main data were gathered by the use of organized questions in questionnaires that were distributed to the owners and managers of the affected rice mills in order to understand the income trends, operation related concerns, compliance with the regulations, the adoption and use of technology, and the effect on the community. Secondary information was derived based on government reports, industry publications, financial records

and past academic studies to give a context and historical background. The researcher uses purposive sampling technique to get rice mills that feature different operation sizes such as small, medium and large mills thus giving a clear picture of the sector. In data analysis, the qualitative and quantitative methods were used. The data were summarized using descriptive statistics like mean, percentage, and frequency distribution and tested using the inferential statistics like correlation and regression analysis to test the hypotheses and investigate the relationship between the operational factors and financial performance. Reliability of the data collection instrument is also determined in the research by measuring internal consistency by using Cronbachs Alpha. Such an approach allows to conduct an in-depth analysis of the ROI of rice mills in the Dhamtari District and their opportunities to grow and develop in this region to create a policy-based feedback that is valuable to the policy-makers, industry participants, and local populations.

Table: Descriptive Statistics of Challenges Affecting Financial Stability of Rice Mills

Variable	N	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Operational Challenges	50	3.82	4	4	0.65	2	5
Financial Challenges	50	4.1	4	4	0.58	3	5
Regulatory Challenges	50	3.76	4	4	0.71	2	5
Financial Stability (Dependent)	50	3.95	4	4	0.6	2	5

Notes:

- Scale used: 1 = Strongly Disagree, 5 = Strongly Agree
- N = Number of rice mills surveyed

Analysis

According to the descriptive statistics, rice mills in Dhamtari District experience significant operations, financial, and regulatory challenges, which will probably impact their financial stability. Financial challenge has the highest mean of 4.10 and it is reasonable to conclude that the most pressing issues to mill operators are the lack of access to credit, irregular prices of raw materials, and high cost of production. The mean operation challenge is 3.82, which means that the company experiences problems with day-to-day operations, the efficiency of the workforce, and coordination of the supply chain. Regulatory issues, with the mean of 3.76, indicate the nature of the complexities associated with licensing, compliance and enforcement of government policies that could further impact on the profitability of the mills. The median and mode of all variables are equal to 4, which means that most of the respondents regard such challenges as a big problem. The standard deviations of 0.58 to 0.71 indicate moderate variability of the mills indicating that most mills have similar challenges though the level of the impact may be different. In general, these descriptive statistics present a preliminary knowledge that operational, financial, and regulatory issues are dominant and could be critical determinants of the financial stability of rice mills and it preconditions the further inferential analysis to test the importance of these relationships.

Table: Multiple Regression Analysis – Effect of Challenges on Financial Stability

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig. (p-value)
Constant	0.812	0.451	–	1.8	0.078
Operational Challenges	0.325	0.082	0.341	3.963	0
Financial Challenges	0.412	0.073	0.428	5.644	0
Regulatory Challenges	0.286	0.067	0.298	4.269	0

Model Summary:

R	R ²	Adjusted R ²	Std. Error of the Estimate
0.821	0.674	0.659	0.372

Notes:

- Dependent Variable: Financial Stability of Rice Mills
- Independent Variables: Operational Challenges, Financial Challenges, Regulatory Challenges
- Significance level: $\alpha = 0.05$

Regression Analysis Interpretation

The multiple regression analysis shows that operational, financial, and regulatory challenges have an important influence on financial stability of rice mills in Dhamtari District. The model shows the relationship between the independent variables and the dependent variable (Financial stability) is strong explaining 67.4 percent of variation in financial stability ($R^2 = 0.674$). The most significant challenge is the financial challenges (Beta = 0.428, $p < 0.001$) where limited access to credit, varying prices of raw materials and expensive operations cost are among the highly important issues defining stability. The operational challenges (Beta = 0.341, $p < 0.001$) and regulatory challenges (Beta = 0.298, $p < 0.001$) also exhibit significant positive impacts, meaning that day-to-day operational inefficiencies and adherence to the licensing and government policies have impacts on financial performance. The coefficients are positive, which means that the more the intensity of these challenges, the more pressure on the financial stability, which proves the critical role of these factors in determining the economic outcomes of rice mills. In general, the results address the alternative hypothesis (H1), and they prove that the presence of operational, financial, and regulatory issues influences the financial stability of rice mills in the district to a significant extent.

Discussion

As observed in this paper, the operational, financial, and regulatory issues have a strong impact on the financial sustainability of rice mills in Dhamtari District. Descriptive statistics showed that the biggest issues by rice mill operators are financial challenges including high cost of production, unstable paddy prices and unavailability of credit. The operational issues such as workforce management, supply chain management, and maintenance of machineries are also significant problems and regulatory issues such as licensing, compliance, and policy regulation are some of the problems that contribute significantly to the financial performance. These

results can be compared with the past studies which have shown that internal and external influences can significantly impact the level of efficiency and profitability of rice milling activities.

The regression analysis also proved the strong impact of these difficulties on the financial stability. The model indicates a value of 0.674 which indicates that a good percentage of financial stability variation is attributable to the joint impact of operational, financial, and regulatory challenges (67 percent). Financial challenges were strongest among the independent variables, then the operation and regulatory challenges. It means that all three elements are significant, but access to finance and good cost management is especially essential to remain profitable and sustainable in the long run. The positive coefficients also imply that with the increase in the intensity of these challenges, the pressure on financial stability is also increased, which means that it is necessary to provide specific interventions.

It has been highlighted in the discussion that rice mills in Dhamtari are not just economic but also important sources of local employment, income and the development of the region. These issues can be solved by providing them with financial aid, upgrading their operations, and simplifying their regulatory frameworks, which will increase their productivity and contribution to the economy. In addition, the paper points out that there should be capacity-building, technological integration, and policy change that reinforce the sustainability of rice mills. This is in line with the world literature that postulates that agro-processing industries grow and become resilient with modernization, financial inclusion and facilitation of regulations.

On the whole, the research illustrates that the financial sustainability of rice mills is a complex problem that is determined by the efficiency of their operations and the financial management of the organization, as well as adherence to the regulations. The results offer a holistic appreciation of the major forces influencing the industry giving a practical insight to the policymakers, industry players, and community groups aiming at enhancing the economic contribution of rice mills in the Dhamtari District. A successful approach to such challenges can result in better income security of mills owners and workers, increased productivity and greater economic development in the region.

Overall Conclusion

The current study has analyzed the role of rice mills in the financial development and growth of the Dhamtari District in the years between 2017-2022. The results reveal that rice mills are very important in the local economy as they generate income, provide employment and in maintaining the stability of the regional economy. Descriptive analysis showed that the operational, financial and regulatory issues are common among rice mills with financial constraints like inadequate access to credit, uncertainty on price of raw materials and high cost of production proving to be the greatest impediments. Profitability also depends on the operation inefficiencies and the ability to adhere to regulatory requirements, which shows the complexity of the challenges that the industry experiences.

Regression analysis revealed that these are the major challenges that affect the financial stability of rice mills. The operational, financial, and regulatory factors can explain a

considerable percentage of the variation in the financial stability with R^2 value of 0.674 (approximately 67 percent). The financial problems were defined as the ones with the most powerful effect on the business, then the operational problems and regulatory problems, with the pressing need to enhance the financial management and resource accessibility. The findings confirm the alternative hypothesis (H1) in that it is imperative to tackle these challenges in order to maintain the economic sustainability of rice mills.

This paper highlights the role of modernization, adoption of technology and policy in improving performance and sustainability of rice mills. Stakeholders can enhance the contribution of the sector to the local economic growth by enhancing operational effectiveness, making financial aid, and simplifying regulatory structures. In addition, rice mills do not only enhance financial growth, but they have social consequences as they generate jobs and sustain people in society.

To sum up, rice mills are critical sources of financial and geographical development in Dhamtari District. Operational, financial, and regulatory issues can be improved using specific interventions to increase their economic contribution and improve the benefits of the operators and workers and to contribute to sustainable growth. The research offers useful information to decision-makers, business executives and players in the industry highlighting that there should be concerted efforts in enhancing financial sustainability and growth prospects of rice mills in agricultural areas.

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