

AN ECONOMETRIC ANALYSIS OF BELL METAL INDUSTRY OF SARTHEBARI WITH REFERENCE TO PRODUCTION, EMPLOYMENT, INCOME GENERATION AND PROFITABILITY

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Ph D Registration No FINAL/06ECO/0020 of 2015-16
B.U. Registration No. 003590 of 2015-16

ABSTRACT

Bell metal is a hard alloy which is used for producing bell and utensils in many places of India. Widespread use of Bell metal can also be found in the neighbouring countries of Pakistan, Bangladesh and Nepal. At present, Sarthebari is the only place in Assam where the bell metal craft is prevailing. . Bell metal production units can be seen in Sarthebari Revenue Circle of Barpeta district, in Sarthebari town area and nine revenue villages i.e. Namshala, Gomura, Karakuchi, Kamarpara, Lachima, Hilepara, Batia, Amrikhawa and Palla. Artisans in the bell metal production units of Sarthebari area produce a number of unique products which are not known to be produced anywhere else viz. *Kahi* (Dinner Plate), *Bati* (Bowl), *Bata* (Plate mounted on a stand), *Baanbati* (Bowl mounted on a stand), *Maihang* (Big plate mounted on a stand), *Taal* (Cymbals), *Lota* (small pot which looks like a pitcher) and Bells and other items. The production process of bell metal is a manual job with little use of machinery. The production procedure of the industry is very unique. Each production unit consists of one master craftsman (*Kohar*) and four to five supporting artisans called *Aidhas*. All the supporting artisans have been assigned different roles in the production of the bell metals. They are termed as – *Gureila or Guiral, Maithner, Kaitner, Kanghoha* and *Jogali*.

The objectives of the present study is

- a) to examine the role played by the Bell Metal industry of Sarthebari in income and employment generation of Sarthebari.

- b) to investigate the techniques of production in this industry on the basis of production functions and also to study the factor intensity of the industry.
- c) to analyse the profitability of the industry through various methods of capital budgeting and to test whether it is a profitable industry or not.
- d) to examine the socio economic condition of the artisans involved in the Bell Metal industry of Sarthebari.
- e) to investigate the weakness and problems, if any, and suggest measures to rectify these so that this industry can grow further.

Based on the above objectives the following Hypotheses are formed and tested:

- i. The bell metal industry has given significant contribution toward the employment and income generation in Sarthebari.
- ii. It is a labour intensive industry which needs increased amount of labour for expansion.
- iii. This labour intensive industry is a highly profitable one.
- iv. Socio-economic conditions of the bell metal artisans are not satisfactory.

The bell metal industry of Sarthebari is unique in many aspects. If we compare it with the bell metal industries of other places in India, we observe that the bell metal industry of Sarthebari is different from them in two aspects. The artisans of Sarthebari use the hitting method where hot bell metal is hit repeatedly to form different objects which is rarely used by other artisans in India. The production technique of bell metal in Sarthebari remains almost static since time immemorial; they even do not use chemicals for polishing the products. Again, the product profile of bell metal industry of Sarthebari is entirely different. The bell metal artisans of Sarthebari do not produce decorative items or bells. Mostly they produce utensils and cymbals.

The study is divided into seven chapters. The chapterisation of the study is –

Chapter I: Introduction

In this Chapter overall introduction of the industry are given.

Chapter II: Employment and Income Generation in the Bell Metal Industry of Sarthebari

In this chapter, the income generated by the bell metal production units are analysed. The average Annual Income of the Master Craftsmen (Kohar) and The supporting Artisans (Aidhas) were analysed in this chapter. This study finds that It can be seen from the above analysis that the industry is able to generate income for the *Kohars* which are significantly higher than the State per Capita GDP at current price. The Per capita GSD of Assam at current price for the year 2017-18 is determined as Rs 82203.00¹ whereas the average annual income of the *Kohar* is estimated at Rs. 146095.00. This industry is also plagued by the problem of lack of raw materials and hence the *Garhshalls* are forced to remain close for a considerably longer period of time which may be more than 30 days in a year. If the *Garhshall* are able to operate all year round without any disturbance, it would be able to generate more income for the artisans involved in the trade.

Chapter III: Production Process and Factor Intensity of Bell Metal Industry of Sarthebari – A Cobb Douglas Production Function Analysis

The objective of this chapter is to study the reasons why this industry has localized in Sarthebari town and its surrounding villages while the bell metal production units of other places of Assam had to be shut down. The production process as well as the factor intensity of the bell metal industry is also analysed on the basis of Cobb Douglas production functions. Objective of this chapter is also to find out whether the industry is operating under increasing, decreasing or constant returns to scale. It was observed that The bell metal industry of Sarthebari is a labour intensive Industry which is subject to decreasing returns to scale. The output elasticity of Capital is very low at 0.083, and that of labour is 0.74. It implies that if this industry has to be developed, importance should be given in developing the productivity of labour.

Chapter IV: Capital Budgeting of Bell Metal Industry of Sarthebari

Capital Budgeting or Investment Analysis or Project Evaluation is the study of sustainability and profitability of a firm or an industry. In this chapter, efforts were made to find out the potential profitability of the industry as a whole through different methods of Capital Budgeting and also try to find out the relative profitability of different products. Capital budgeting methods of Payback period, Profitability Index and Internal Rate of

¹ *Statistical Handbook of Assam 2018.*

Returns are used to assess the profitability of the bell metal production Units. It was observed that bell metal production is a highly profitable profession, where the entrepreneur can earn a very high rate of return which is as high as 319.775%.

Chapter V: Socio Economic Conditions of the Artisans and Traders of Bell Metal Industry of Sarthebari

In this chapter, the socio-economic status of the bell metal artisans is analysed from the point of view of demographic profile, education, income and standard of living and access to the health facilities. The marketing sector of the bell metal industry is also very important. It was observed the bell metal Artisans are living in a very delicate condition. They are not highly educated. Only 1.74% of the *Kohars* in the sample are Graduate with none having a Masters Degree. In the analysis of the Kuppuswamy Scale, it has been observed that almost all the families of *Kohars* belong to the lower strata of society. Nine out of Ten *Kohars* fall in the lower middle class category while the rest except two fall in the Upper Lower Category.

Chapter VI: Problems and Prospects of Bell metal Industry of Sarthebari

In this chapter, various problems faced by the *Kohars* are highlighted. The problems faced by the *Kohars* were categorised into economic and non-economic problems. Again we have also discussed the prospects of the industry so that it can develop further. It was observed that The bell metal industry of Sarthebari has been suffering from a number of constraints, which are both economic and non economic in nature. The economic problems faced by the industry can be addressed to with a three pronged formula. The Government, the Assam Cooperative Bell Metal Utensils Manufacturing Society Ltd. and the *Mohajons* should work together for solution of these problems. The non economic problems faced by the industry needs some special attention from the Health and Education departments of the Government of Assam.

Chapter VII: Summary, Conclusion and Policy Recommendation.

This study is a sample survey of 172 *Garhshalls* situated in Sarthebari and its adjoining villages of Namshala, Gomurah, Karakuchi, Lachima and Amrikhawa. In this study, first we have examined the role played by the bell metal industry of Sarthebari in employment and income generation and its importance in Assam. Secondly, the production

techniques of the industry were analysed on the basis of Cobb-Douglas Production Function and the technical efficiency were also estimated using the Stochastic Frontier model. The causes of localisation of the bell metal industry at Sarthebari were also analysed from the point of view of economies of scale. Thirdly, we have analysed the profitability of the industry on the basis of various capital budgeting techniques viz. Payback Period, Internal Rate of Returns and Profitability Index. Fourthly, we have examined the socio economic profile of the bell metal artisans and the traders associated with the marketing of the product. Lastly, we have investigated the problems and prospects of the industry and tried to put forward measures for the development and growth of the industry.

The major findings of the study includes - Among all the products of the industry, *Kahi* is the most popular one with 43.02% of the *Garhshalls* produce it. It is the product with highest demand in the market and generates highest income to the Kohars. As a cluster, Sarthebari has the highest concentration of *Garhshalls* and most of them produce *Kahi* and *Taal*. The bell metal industry of Sarthebari also enjoys external economies of scale like skilled labour. Due to the concentration of more than 300 production units, the bell metal industry also enjoys external economies of scale like skilled labour.

The bell metal industry of Sarthebari suffers from a number of problems like any other handicraft industry in India. The problems faced by the bell metal industry of Sarthebari can be broadly divided into two groups- economic and non economic problems. The economic problems faced by the bell metal industry which we have discussed in the study are- lack of raw materials, lack of product diversification, marketing problems, challenge from imitation products, challenges from substitute products, primitive techniques of production, transportation problems, financial problems and working conditions of the *Garhshalls*.

Keywords: *Bell metal, Garhshall. Kohar, Aidha, Productivity, Profitability*