DEVELOPMENT POTENTIAL OF RATTAN-BASED HOUSEHOLD INDUSTRIES: A CASE STUDY OF JALPAIGURI DISTRICT (INDIA)

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Abstract:

Rattan based industries provide the base for a broad range of rural and semi-urban household industries that provide livelihood for the rural poor, in the unorganized sector. A large number of rattan-based industrial units are found Jalpaiguri district of West Bengal, India. Due to wide prevalence of illiteracy and poverty the entrepreneurs lack scientific and technical knowledge and as a result of these their techniques of production remain inferior and the products lack standardization. The products are mostly sold in the local market. Middlemen play a powerful role in marketing these indigenous products. The study is based on 69 sample units collected from 15 villages of the district through field survey. The purpose of the study is to analyse the development potential of rattan-based industries in terms of production in the study area. It aims to evolve structural relationship among variables and to derive policy measures with regard to the development of the said sector. Multiple regression model has been used in the present analysis. In the process of estimating the development potential in terms of production using the model, several factors related to it are identified as the model variables.

Keywords: Rattan-based Industries, Multiple Linear Regression, Development, Policy

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Introduction

Household Industries play a vital role in the development of a developing economy like India. These industries not only raise the per capita income and standard of living of the people by providing employment opportunities but also reduce the disparities in the economic structure. Besides, the promotion of household industries provides an opportunity for the optimum utilisation of local resources to serve the local needs. They play important role in overall economic development of the country and contribute to the export earnings (Kasemi, 2013). Besides economic aspects, the social role household industries are quite significant in achieving various social goals such as removal of poverty, attainment of self-reliance, reduction in disparities in income, wealth and standard of living and regional imbalances (Pandey, 2013).

Rattan-based industries provide the base for a broad range of rural and semi-urban household industries that provide livelihood for the rural poor, in the unorganized sector. These industries produce various utilitarian articles as well as decorative articles. A large number of rattan-based industrial units are found in the study area. The industrial units are located both in rural and urban areas. However, majority of the industrial units are found in the rural areas. Due to wide prevalence of illiteracy and poverty they lack scientific and technical knowledge and as a result of these their techniques of production remains inferior and the products lack standardization. The products are mostly sold in the local market. Middlemen play a powerful role in marketing these indigenous products. The prevalence of outdated mode of production has hampered the growth and development of the sector. (Chhetri and Sao, 1995). The biggest constraint towards the rattan-based sector from developing has been the irregular and scanty supply of rattan for entrepreneurial use.

Objectives

The objective of the study is to analyse the development potential of rattan-based industries in terms of production in the study area. It aims to evolve structural relationship among variables and to derive policy measures with regard to the development of the sector.

Study Area

The district Jalpaiguri is bounded by 26° 16' N to 27° 00' N latitudes and 88° 04' E to 89° 53' E longitudes. The district situated in the northern part of West Bengal has international borders with Bhutan and Bangladesh in the North and South respectively and borders with

Assam and Darjeeling hills in the East, West and Northwest. As per the Census 2011, the district had a population of 3,869,675 of which male and female were 1,980,068 and 1,889,607 respectively. Average literacy rate of the district is 73.25 per cent. The economy is chiefly agrarian although the industrial belt is gradually attempting to expand its periphery.

Data Base

The study is based on empirical data collected from both primary and secondary sources. Secondary sources include Census reports, reports of the District Industrial Centre and District Statistical Handbook. Primary data has been collected from sample artisans and household industrial units through a schedule constructed for such purpose. A total of 69 industrial units of rattan-based industries have been surveyed which covers 15 villages of Jalpaiguri district in the state of West Bengal, India. Dataset has been prepared from these sample units.

Model Specifications and Estimation Methods

Multiple Linear Regression model has been used in the present analysis due to its simplicity, accuracy and easy manageability over other models. In the process of estimating the development potential in terms of production using the model, several factors related to it are identified as the model variables. By using this model, the Multiple Linear Regression (MLR) equations have been constructed. Therefore, the most significant factors that influence the productivity of rattan-based industries are determined by using the Multiple Linear Regression model.

Multiple Linear Regression model of production of rattan based industries is shown in the following equation:

$$Y = a\ X_1\ X_2\ X_3\ X_4\ X_5\ X_6\ X_7\ X_8\ X_9 \qquad \ldots\ldots\ldots\ldots\ldots\ldots(1)$$

Where,

Y = Production of rattan-based industries (Rs.)

X_1 = Size of the unit in terms of employment

X_2 = Duration of daily operation of workers per unit in hours

X_3 = Percentage of part-time workers to total workers per unit

X_4 = Maximum distance covered for purchase of raw materials (km)

X_5 = Value of working capital per unit (Rs.)

X_6 = Percentage of goods sold to customer

X_7 = Percentage of finished products sold to middlemen

X_8 = Experience of the workers (in code taking a 3 point scale)

X_9 = Educational level of the workers (in code taking a 5 point scale)

The basic form of Multiple Linear Regression equation may be expressed as follows:

$$Y = a + X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + X_7 + X_8 + X_9 \quad \text{..... (2)}$$

Where, in the equation *a* is the constant, variables $X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8$ and X_9 are slope coefficients of respective variables in the equation 2.

The method of least square has been used to estimate the equations.

Empirical Results and Discussions

Regression coefficients of nine independent variables are obtained using statistical software SPSS 21. The mathematical regression model is obtained as:

$$Y = 10919.435^{**} + 815.197^{**}X_1 + 304.098^{*}X_2 - 211.722^{*}X_3 - 19.908X_4 + 15.091^{**}X_5 + 8.522X_6 - 15.759^{*}X_7 + 3.908^{**}X_8 + 64.190^{*}X_9$$

(987.540) (290.078) (0.978) (0.089) (12.201) (4.302) (0.656) (7.539) (0.034) (16.980) ..... (3)

$R^2 = 0.802^{**}$

Figures in the parenthesis are corresponding standard errors and ** and * indicate that the parameters are statistically significant at 1 per cent and 5 per cent level of significance respectively for n-p[1] degree of freedom. R^2 represents the square of multiple correlation-coefficient (coefficient of determination).

From the model the coefficient of determination (R^2) value is found to be 0.802. It reveals that 80.2 per cent of the variability of the independent variable is accounted for by the model.

The structural relations presented in the table reveals that productivity is influenced positively by size of the units, hours of operation, working capital, products sold to customer, experience and educational level of the workers. It is negatively influenced by percentage of part-time workers, distance covered for purchase of raw materials and products sold to

middlemen. The explanation may be that rattan-based household industries depend on labour and that is why the elasticity of production with respect to size of the units is very high. It may be said that these industries are labour intensive and an increase in working hours leads to increase of production. Productivity is favoured by increase in working capital because higher working capital is spent either for purchase of better quality raw materials resulting into more profitable products or for more production thereby increasing in value added through sales maximisation approach. Percentage of goods sold to customer impacts production positively because retail customers always pay higher prices than what middlemen pay for the same goods. The increase in experience and education of entrepreneurs leads to increase in productivity of the units because the fact that the educated and experienced entrepreneurs can use the human as well as the capital resources more efficiently through division of labour, provision of better working conditions etc. The educated entrepreneur can handle problems more professionally and competently (Khan et al., 2010).

The negative impact of the part-time workers may be because of the fact that they are usually unskilled and help only in the minor production process like processing of raw materials. Percentage of goods sold to influences production negatively because middlemen pay lower price for the products and exploit the workers.

Conclusion and Policy Recommendations

The study attempted to identify factors affecting the productivity of rattan-based industries in Jalpaiguri district of West Bengal in India. The important findings are that size of the units, hours of operation, working capital, products sold to customer, experience and educational level of the workers increasingly impacted the productivity of rattan-based household industries. Factors like part-time workers, distance covered for purchase of raw materials and products sold to middlemen influenced productivity adversely.

The empirical findings have important implications on the development of rattan-based industries in the study area. First of all, adequate financial support should be given to the entrepreneurs since most of the units are suffering from lack of working capital. Loans should be provided to the unit in order to improve the working conditions of unit. Besides the state governments, nationalized commercial banks and other financial institution should come forward to finance the entrepreneurs providing short, medium and long term loans. Ministry of

Commerce and Industry should make a comprehensive policy plan for household industry for technical support and education. Training and education of entrepreneurs should be increased through workshops and training programmes (Lakshman, 1966). It may be done through District Industrial Centres (DICs). Working conditions of the unit should be developed. Design development of new items and improvements traditional tools and age old techniques need to be introduced. Marketing support can be given to workers group through institutional arrangements or departmental support, so that the workers may get a better return and reduce their dependency on the middlemen. Cooperative societies should be established which should take up the supply of raw material, purchase of finished goods from artisans, marketing and provision of credits. Finally, a comprehensive study is needed for the overall policy formulation covering a wide range of research activities including data collection on the production and marketing aspects (Sao and Chhetri, 2008).

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