

A STUDY ON TECHNOLOGICAL UPGRADATION AND AUTOMATION OF CRICKET BAT MANUFACTURING UNITS IN ANANTNAG DISTRICT**Dr. Sanjay Sonawane¹ and CA. Prachi Malgaonkar²**

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ABSTRACT

As the world is progressing with the new technological advancement, mechanization and automation is an imperative to the success of large as well as small and medium scale enterprises. However, cricket bat manufacturers cling to either traditional method of manufacturing or prefer semi automation. Their major concern is cost of upgradation, loss of employment for daily labourers and time to adapt with new technological innovation. This research paper is written with an objective to understand the mechanization process and its impact on cricket bat manufacturing units in Anantnag District. For the following purpose data is collected from the 126 respondents who are engaged in manufacturing and distribution of Kashmir willow cricket bat by sending questionnaire. Secondary data is also collected from government publications, newsletters and periodicals. The new technological shift will ensure efficient and efficacious production of cricket bat ensuring its significant quality. The number of factory labours will be impacted on lower scale. However, there will be employment opportunities in selling and distribution. Also, cricket bat manufacturing units in Anantnag district can avail government assistance and incentives for procurement of new machines. Sharing of cost and facilities amongst all the units in cluster reduces the capital investment requirement of an individual unit.

Keywords: Mechanization, Cluster, Technological Advancement, Automation, Innovation

INTRODUCTION

The stretch of 15 Kilometres situated on NH- 44 Jammu Srinagar Highway is home for Indian Willow Cricket Bat Manufacturers. The Kashmir Willows from nearby areas are processed in finished as well as semi-finished cricket bats. Approximately 70 clusters sharing common manufacturing amenities operate in this area. The manufacturing process has undergone several changes over the 10 decades of manufacturing. The complete labour incentive industry is gradually welcoming automation of certain manufacturing activities. The labours are satisfied and believe mechanization of the process provides assistance to carry out manufacturing smoothly and efficiently. However, since inception labours are acting as backbone of this industry. Sudden shift towards strikes the fear of automation resulting into layover and affecting the lives of thousands of unskilled and semi-skilled labours.

The owners of manufacturing units are in dilemma. The technology, new machines and automation of manual task will allow them to exploit full capacity, be efficient at time and to carefully deliver the quality product. On the other hand, the labours, the cornerstone of the back manufacturing units may face drawback.

The cost of technology is another complication. Usually, technology comes with huge cost. More than 75% of cricket bat units operating in are small scale or medium scale enterprise. The process of knocking, slotting, splicing of cricket bat is mechanised in the other countries. When it comes to India, the cost of complete automation is an issue. However, this substantial cost is shared by manufacturing in clusters using common facilities. Even after sharing of such cost, India has not reached to the level of complete automation in the production of cricket bat.

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Interruption in electricity and voltage woes is present constraint. As the giant machinery required uninterrupted power supply, fluctuations and power cut can hamper the production. The union of Jammu and Kashmir faces power issues on certain occasions, also back up facilities are not enough for the machineries to operate on full capacity. Cost of downtime and cost of units lost in production add to the cost of technology. The manufacturers prefer to use manual labour then using technology to avoid the cost and consequences of inadequate infrastructure required for the automation.

The manufacturers of cricket bat in Anantnag have found midway solution to the concerns in mechanization of manufacturing process. With the growing demand in the market and shortage of semiskilled and skilled labour, the manufacturer has to depend on machine. However, the human intervention is required making the procedure semi-automatic. The blend of human beings and machinery is fulfilling the demand of current market. But to plan further expansion and exploiting international market, technological shift is crucial. The union of Jammu and Kashmir is aiding the capital investment through J&K SIDCO and mudra scheme. The awareness and utilization of grants and aids provided by the government can assist manufacturers of cricket bat to endure and excel in the growing international market.

REVIEW OF LITERATURE

“Bilal Ahmad Dar, Irfan Ahmad Thokar” (2012) in their title “Growth, Performance and Challenges of Cricket Bat Industry of Kashmir India” presented in “International Journal of Educational Research and Technology” discussed about progress made and difficulties face by Cricket Bat Industries in Kashmir Valley.

“Smith, D. J. Rossiter, W., & Matthews, R.”(2021) in their paper “The'pod shaving'revival: how rural entrepreneurship is leading to a re-birth of craft production in cricket bat manufacturing in England” presented in “18th Rural Entrepreneurship Conference, University of Swansea, Swansea.” explained the revival of cricket bat industries in UK and the techniques of revival.

“Gola, K. R., Dharwal, M., & Narayanan” (2014) in their work “Small and medium Sports enterprises - An Engines of Economic Growth with Special Reference to Indian Economy” printed in “4D International Journal of Management and Science” explained how SME’s help in contributing to the success of Indian Economy with special reference to Sports Venture.

“Jensen Mike”(2003) in his book “Material in Sports Equipment” published by “Woodhead Publishing (Elsevier Ltd)” has provided information about material, technologies and innovative process to manufacture different varieties of sport equipment.

“Mortimer, G.” (2013) in his book “A history of cricket in 100 objects” has stated changes in cricket that took place since past 50 decades with respect to the game format, the players attitude, the sport equipment and the new technologies.

OBJECTIVE

1. To study about up-to-date technology used to manufacture cricket bat.
2. To analyse pros and cons of automation in production of cricket bat in Anantnag district.
3. To obtain information on new innovative techniques and ongoing research in the area of cricket equipment and cricket bat fabrication.
4. To find out various ways of securing grant and capital funding for investment in technology to manufacture crickets bats in the union of Jammu and Kashmir.
5. To suggest improvement in ongoing manufacturing process ensuring cost reduction and efficient manufacturing of cricket bats in Anantnag district.

Hypothesis

- H1: The latest and the modern technology is used in manufacturing cricket bats in Anantnag district.

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- H0: There is no up-to-date technological innovation introduced in production process of cricket bat manufacturing units in Anantnag District.
- H1- The mechanization of manufacturing process will have positive impact on human labours and human resources in cricket bat manufacturing units in Anantnag District.
- H0- The automation of cricket bat manufacturing will not have any pragmatic effect on labours and human resources working in cricket bat units in Anantnag District.
- H1- The owners of cricket bat manufacturing units have complete knowledge about procurement of government aid and grants for capital investments.
- H0- The proprietors of cricket bat manufacturing units don't have through knowledge about government capital incentives and schemes.

RESEARCH METHODOLOGY

Universe: The Universe of the study consists of audience who are indulged in Kashmir Willow Cricket Bat Manufacturing Industry.

Sample Size: For the above-mentioned intention, information is gathered from 64 people who work as labourers or employees of Kashmir Willow Cricket Bat Manufacturing Unit by giving questionnaire and interviewing 14 cricket bat manufacturing owners.

Techniques of data collection: The study consists of data accumulated from primary and secondary sources.

1. Primary Data: The methods incorporated for primary data collection are

- a. Questionnaire Method
- b. Interview Method
- c. Observation Method

2. Secondary Data – The sources used for secondary data collection are

- a. Websites
- b. Journal, Magazines and Periodicals.
- c. Research Publications

Data Analysis

1. Descriptive Statistics

- Calculation of mean, median and standard deviation for key variables like the level of automation, labour employment, production capacity and awareness of government schemes.
- Create frequency distributions for categorical variable such as type of automation used. (full or partial automation)

2. Inferential Statistics

- Compare means using t-test or ANOVA to see if there are significant differences between different groups.
- Use of Chi-Square for categorical data to examine relationship between variables. (type of automation and government schemes)

DATA INTERPRETATION**Capacity Utilization**

With growing popularity of the cricket and promotion of Kashmir Willow Cricket by Afghanistan Cricket Team in ODI Cricket World Cup followed by Master Blaster Sachin Tendulkar on his visit to Kashmir Valley in March 2024, there is surging demand of Kashmir Willow Cricket Bat especially in Asian Subcontinents. However, the manufacturers in Kashmir still resort to some manual procedure which are already mechanised in other cricket bat producing countries. Manual processing or partial automation is one of the reasons for not utilizing full production capacity.

Excess Manpower

The rate of unemployment is a matter of concern in Kashmir Valley. When automation comes into a picture, it will again have an impact on unemployment. As per Directorate of Industries and Commerce - Jammu and Kashmir, the need has arisen for the use of upto date technology in various sectors. Technology is also responsible for creating certain jobs such as machine operator, manpower for overhauling machine, additional sales force, etc. The new jobs will require technical knowledge of operations and marketing. The Directorate as well as Government will acknowledge the upgradation of technical skill by making training, courses and workshops available to the workforce.

Interruptions in Mechanization

The new technology required is always preceded by proper infrastructural facilities and environment. Power eruptions and voltage issues are very common in Anantnag District. The disturbance caused by power interruptions results in damaged and low-quality product and sometimes normal wastage. This might add to the cost of new technology. However, manual production is seldom affected by such disturbances. Also, area of Jammu and Kashmir is caught in political and militancy traction. There is closedown or restraint for few days due to such tensions. The production is at complete halt. Non operation of the machinery beyond certain time limit leads to more overhauling expenses.

Partial Mechanization

The cricket bat manufacturers are trying to balance out between automatic and manual process. They have planned to use machinery for assisting labour rather than replacing labour. The unification of men and machinery for the production adds to the quality of product. The frailty of men is compensated by the machine and vice-versa. The machinery and men complement each other. But there is also need for upgradation of technology to take best out of the combination of men and machinery.

Government Schemes for Capital Expenditure in the State of Jammu and Kashmir

Government is successful in convincing IDBI, IFCI and Jammu and Kashmir Bank to provide low-cost loans to for the small and medium size enterprises to promote favourable business atmosphere and entrepreneurship. Also, government aids are available covering upto 20% of the CAPEX and heavy investment in technology. Women Owner gets additional concession for the loan under the Mudra Scheme. The above-mentioned schemes and grants make automation bit affordable for cricket bat manufacturers in Anantnag. J&K SIDCO also educate the manufacturers about various provisions and schemes offered by the government from time to time.

Testing of Hypothesis

Hypothesis	Result	Method Used
H1: The latest and the modern technology is used in manufacturing cricket bats in Anantnag district.	Rejected	T-Test to compare the mean level of technological adoption in Anantnag.
H0: There is no up-to-date	Supported	

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technological innovation introduced in production process of cricket bat manufacturing units in Anantnag District.		
H1- The mechanization of manufacturing process will have positive impact on human labours and human resources in cricket bat manufacturing units in Anantnag District.	Supported	Repeated measures ANOVA to compare labour outcome
H0- The automation of cricket bat manufacturing will not have any pragmatic effect on labours and human resources working in cricket bat units in Anantnag District.	Rejected	
H1- The owners of cricket bat manufacturing units have complete knowledge about procurement of government aid and grants for capital investments.	Rejected	Two proportion Z-Test to compare knowledgeable owners against threshold.
H0- The proprietors of cricket bat manufacturing units don't have through knowledge about government capital incentives and schemes.	Supported	

CONCLUSION

With the rising demand for Kashmir willow cricket bat throughout the globe, operating at full capacity and even the expansion in present capacity is necessity. However, the man power alone will fail to manage the surge in demand. It calls for automation to deliver quality cricket bat to the customer. The power interruption and shortage of power supply is the significant hindrance in the way of automation. Automation might also result in layoff of unskilled labour. As per SIDCO, the skill imparting courses and training might help to divert this workforce to other process. The cost of technology is another issue. The Government of India has come up with the several schemes to help backward areas and the hilly states to incur their capital expenditure and to promote industrialization in these areas. The information related to the same is available in bits and pieces to the manufacturers.

SUGGESTIONS

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1. As the infrastructure is not completely evolved but developing in Jammu and Kashmir, Cricket Bat Manufacturers should gradually move from partial to complete mechanization.
2. The current labourers can learn technical skills required to operate and over hall machinery at the skill centres and various programs organised by JKTPO on the existing requirements.
3. The ongoing infrastructural projects especially hydropower projects are to expediated for the continuous power supply.
4. The consultancy services for the availment of aid, grant, tax benefits and incentives can be provided at free or low cost to the manufacturers in the area by Industry and Commerce Department, Jammu and Kashmir.

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