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Constraints and strategies for enhancing bamboo craft production and marketing in Narayanpur district of Chhattisgarh: A comprehensive analysis

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Abstract

This study investigates the constraints experienced by bamboo craft markets and suggests measures for improving the production and marketing of bamboo products in the state of Chhattisgarh, with a focus on the Narayanpur district. The research was conducted at the Chhattisgarh Handicraft Development Board Narayanpur, the sole bamboo craft center in the district. A sample of 50 artisans was selected from various income categories, and their household characteristics were analyzed. The study identified key constraints in both production and marketing. In production, high labor costs, limited availability of raw materials, insufficient training centers, financial constraints, and poor economic conditions were significant challenges. In marketing, poor infrastructure, high commission charges, competition from low-cost products, lack of market linkages, and insufficient market information were prominent issues. The study utilizes Garrett's ranking technique to analyze these constraints. Based on the findings, the study recommends improving training opportunities, providing financial support, and enhancing market linkages to boost the competitiveness and sustainability of bamboo craft production in Chhattisgarh.

Keywords: Bamboo craft, production constraints, marketing challenges, financial constraints, market linkages, Garrett's ranking technique, economic growth, sustainability, bamboo products

Introduction

Bamboo is a fast-growing, renewable, and versatile resource with over 1,500 recorded uses, making it a significant contributor to rural and urban livelihoods. Often called "The Green Gold" or "The Poor Man's Timber," bamboo has ecological, economic, and cultural importance in India. It supports the bamboo craft sector, which generates significant employment, particularly for rural women, and contributes Rs. 15 billion annually.

Bamboo, a crucial forestry species, is widely distributed across India and plays a significant role in the rural economy. Historically known as "the poor man's timber," it has been an essential livelihood source for millions of rural people. Bamboo is now gaining recognition in the global market, which was valued at \$68.80 billion in 2018 and is projected to grow at a compound annual growth rate (CAGR) of 5.0% from 2019 to 2025 (Bamboos Market Size & Share, Global Industry Report, 2019-25). This shift highlights bamboo's increasing economic importance, making it not only a resource for the impoverished but also a valuable commodity for the global economy.

In Assam, a study by S.K. Jha, D. Sharma, and B.K. Tiwari (2014) examined forest-based artisans across 11 districts and found that while many villages had artisans producing local artifacts, only a limited number engaged in commercial production. Of those involved in commercial activities, 46.53% worked with bamboo, 28.47% with cane, and 25% with wood. Raw materials were sourced from within villages (26%), outside villages (37%), and from other states (26%). The study emphasized the need for sustainable raw material harvesting and suggested that financial assistance and training could help artisans enhance product quality and competitiveness in local, national, and international markets. Support from government and private agencies is essential to improve the livelihood of these rural artisans and rejuvenate the craft sector.

Materials and Methods

The study was conducted in the Narayanpur district of Chhattisgarh, with a specific focus on the Narayanpur block, which was purposively selected in Chhattisgarh.

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In Chhattisgarh, three bamboo craft centers were situated in Narayanpur, Gariaband, and Rajnandgaon districts, and Narayanpur was purposefully chosen for the research. Within Narayanpur district, the "Chhattisgarh Handicraft Development Board Narayanpur" was selected as the sole bamboo craft center for the study. Among the various bamboo products produced at this center, certain major bamboo craft items sofa set, dining table, book rack, office chair, bamboo bed, corner rack, table lamp. The study considered a sample of 50 artisans, and an analysis of the general characteristics of their households revealed significant variations in family composition and average family size across different income groups. The sample included 19 households from Category I (higher income), 21 from Category II (medium income), and 10 from Category III (lower income).

Garrett's ranking technique

Garrett's ranking Technique is a tool that is commonly utilized to evaluate a variable that uses mean scores expressed in ranks. There are 24 methods available for converting orders of constraints and benefits into numerical ratings. From the point of view of respondents, this technique has a primary advantage over simple frequency distribution; the constraints are organized based on their intensity. The ranking of the same number of respondents could have been different based on two or more constraints. Garrett uses a formula to convert ranks into percentages

$$\text{Percentage position} = 100 * (R_{ij} - 0.5) / N_j$$

Where,

R_{ij} = Rank given for i th; constraint by j th individual.

N_j = Number of constraints ranked by j th; individual.

Garrett and Woodworth (1969)'s table was used to convert the percentage position of each rank into scores.

Each factor had the scores of individual respondents added together and divided by the total number of respondents who had scores added. All constraints had their mean scores arranged in descending order and were ranked accordingly.

Results and Discussion

The study identified key constraints faced by artisans in both the production and marketing of bamboo craft products. In production, 59.54% of artisans reported high labor costs as a significant issue, while 54.64% struggled

with the high cost and limited availability of raw materials. Additionally, 53.38% noted the insufficient number of training centers, and 53.14% of artisans faced financial constraints. Lastly, 50.6% highlighted poor economic conditions as a barrier to production. In marketing, 55.82% of artisans faced challenges due to poor marketing facilities, while 55.38% experienced difficulties from high commission charges. The influx of low-cost products was an issue for 54.2%, compounded by 51.92% reporting a lack of market linkages and 51.86% struggling with insufficient market information.

The study revealed that labor costs and the availability of raw materials are the primary production constraints. Financial limitations, coupled with poor economic conditions, hinder artisans' ability to expand and improve production. Additionally, the limited number of training centers restricts skill development.

In marketing, poor marketing infrastructure, high commission charges, and competition from low-cost products present significant challenges. A lack of market linkages and insufficient market information further complicates access to broader markets. Addressing these issues by improving training opportunities, providing financial support, and enhancing market linkages could improve artisans' competitiveness and sustainability.

Table 1: Constraints faced by artisans in production of bamboo craft product

S. N.	Particular	Rank
F1.	Less number of training facility	1 st
F2.	High cost of labour	2 nd
F3.	Inadequate financial facility	3 rd
F4.	Less availability of improved equipment	4 th
F5.	High cost of raw materials	5 th
F6.	poor economic condition	6 th

Table 2: Percentage position and the matching value in the Garrett's table

Rank	Percentage Position	Garret Table	Score
1	$100(1-0.5)/6$	8.33	84
2	$100(2-0.5)/6$	25.00	66
3	$100(3-0.5)/6$	41.67	56
4	$100(4-0.5)/6$	58.33	49
5	$100(5-0.5)/6$	75.00	40
6	$100(6-0.5)/6$	91.67	27

Table 3: Multiply the Garret value by the specified value for every rank.

Factors	1st*84	2nd*66	3rd*56	4th*49	5th*40	6th*27	Total	Average score (Total/350)	Rank
F1	840	462	336	441	320	270	2669	53.38	III
F2	1260	594	280	441	240	162	2977	59.54	I
F3	588	594	560	392	280	243	2657	53.14	IV
F4	252	594	672	441	360	216	2535	50.7	V
F5	504	924	448	294	400	162	2732	54.64	II
F6	756	132	504	441	400	297	2530	50.6	VI

Table 4: Constraints faced by artisans in Marketing of bamboo craft product

S. No.	Particular	Rank
F1.	Lack of organized market	1 st
F2.	Higher commission charges	2 nd
F3.	Inflow of low cost products	3 rd
F4.	Dearth of market linkages	4 th
F5.	Insufficient market information	5 th

Table 5: Percentage position and the matching value in the Garrett's table

Rank	Percentage Position	Garret Table	Score
1	$100*(1-0.5)/5$	10	84
2	$100*(2-0.5)/5$	30	61
3	$100*(3-0.5)/5$	50	53
4	$100*(4-0.5)/5$	70	44
5	$100*(5-0.5)/5$	90	27

Table 6: Multiply the Garret value by the specified value for every rank.

Factors	1st*75	2nd*60	3rd*50	4th*40	5th*25	Total	Average score (Total/350)	Rank
F1	1008	610	424	484	243	2769	55.38	II
F2	672	732	530	308	351	2593	51.86	V
F3	840	427	477	528	324	2596	51.92	IV
F4	756	671	530	528	216	2701	54.02	III
F5	924	610	689	352	216	2791	55.82	I

Suggestions

To address production constraints in bamboo craft, several measures can be implemented. These include providing institutional credit to offset high labor costs, ensuring easy access to raw materials through government-run supply centers, and offering training programs to enhance artisans' skills. Collaborations with foreign designers could also introduce advanced techniques. Research and development should focus on modernizing production methods and improving equipment. Additionally, implementing a minimum support price for bamboo products will guarantee fair wages for artisans. For marketing, improving infrastructure such as transport, communication, and power supply is crucial to ease market entry. Forming cooperatives and establishing market linkages will help create a structured marketing system. The government should regulate commission charges to ensure fair returns for artisans. Value addition through unique, high-quality designs and foreign collaborations can enhance market appeal. Organizing cooperative systems will connect artisans with external buyers, and awareness campaigns will educate them about government schemes and financial opportunities. Publicity through exhibitions and promotional events will increase visibility and connect artisans with potential buyers.

Conclusion

The study highlights several production and marketing constraints faced by artisans involved in bamboo craft in Narayanpur district of Chhattisgarh. The primary production challenges include high labor costs, limited raw material availability, financial constraints, and insufficient training centers, which hinder artisans' capacity to enhance production. Marketing difficulties such as poor infrastructure, high commission charges, competition from low-cost products, and lack of market linkages further complicate the commercialization of bamboo products. Addressing these issues by improving training programs, offering financial support, and strengthening market linkages is essential for enhancing the overall sustainability and growth of the bamboo craft sector in the region. By implementing these measures, the competitiveness of bamboo artisans in Chhattisgarh can be significantly improved, contributing to both economic growth and cultural preservation in the state.

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