AN ECONOMIC ANALYSIS OF MARKETING OF SUGAR IN BASTI DISTRICT OF UTTAR PRADESH

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ABSTRACT

The study examines sugarcane production and marketing in the Basti district of Uttar Pradesh, India. It uses a multistage sampling procedure to select the district, blocks, villages, respondents, and market functionaries. The research aims to understand factors influencing sugarcane production and marketing in the area. The analysis reveals a need for educational and technical support for small-scale farmers. The study also highlights the efficiency advantage of direct dealings with sugar factories over village dealers. Challenges such as climate change impacts, price volatility, and alternative sweeteners highlight the need for adaptive strategies and innovative solutions.

Keywords: Sugarcane production, Marketing efficiency, Marketing Channels, Constraint

INTRODUCTION

The Basti District in Uttar Pradesh, a significant sugarcane belt in India, is a complex economic landscape that involves various steps from cultivation to marketing. Sugarcane cultivation is heavily influenced by factors such as monsoon season, irrigation facilities, soil type, and high-yielding cane varieties. Farmers' decisions on acreage and variety are influenced by market prices, input costs, and government policies like minimum support prices (MSP) and subsidies for fertilizers and electricity for irrigation.

Post-harvest, transportation of sugarcane from fields to mills becomes a logistical challenge, with costs and losses incurred during transportation affecting the overall economics of sugar production. The cooperative and private sugar mills in Basti play a pivotal role in this phase, with their procurement policies affecting farmers' incomes and supply chain efficiency.

The milling process involves significant capital and operational expenditures, and technological advancements and energy efficiency measures are crucial for mills to improve profitability and environmental sustainability. The co-generation of power from bagasse (a byproduct of sugarcane) provides a secondary revenue stream for mills while contributing to the region's energy mix.

Marketing of sugar faces volatility in prices due to fluctuations in production, government policies on export-import, and global market trends. Domestic consumption patterns, influenced by population growth, dietary habits, and

industrial demand from confectionery, beverages, and pharmaceutical sectors, dictate market dynamics. Government interventions, such as stock holding limits, export subsidies, and ethanol blending mandates, aim to stabilize prices and ensure farmer welfare while addressing environmental concerns.

The economic analysis of sugar production and marketing in Basti requires a discussion on the socio-economic impact on farmers, employment generation in the agricultural and industrial sectors, and the environmental implications of sugarcane cultivation and sugar milling. Collaborative efforts from the government, industry stakeholders, and farming community are needed to ensure sustainable growth in this complex sector.

OBJECTIVES OF THE STUDY

For a better understanding and to cover all the objectives of the study, results are presented under the following heads:

1.   To determine price spread producer's share in consumer's rupees, and marketing efficiency, in existing channels.

2.   To find out the constraints in sugarcane and to suggest suitable measures to overcome them.

RESEARCH METHODOLOGY

The study focuses on the production and marketing of sugarcane in the Basti district of Uttar Pradesh, a crucial district in the country. The research uses a multistage sampling procedure, selecting the district, block, villages, respondents, and market functionaries. The study was conducted in three sections: selection of the district, blocks, villages, respondents, and market functionaries. The district was chosen for its high agricultural land under sugarcane cultivation. The blocks were selected through a purposive selection process, with Tulsipur block being chosen for the study. The villages were selected randomly from a list of farmers growing sugarcane in selected villages. The market functionaries were chosen from a list obtained from Basti Chini Mills Ltd, a fast-growing sugar manufacturer in India. The study aims to understand the factors influencing sugarcane production and marketing in the Basti district.

The study aimed to explore the cost of sugarcane production in the agricultural sector during the 2023-24 period. Primary data was collected through a reconnaissance survey, followed by personal interviews with consumers and shopkeepers. Secondary data was collected from various sources, including the block office and district office.

RESULTS AND DISCUSSIONS

Objective 1: To estimate marketing cost, marketing margin, price spread marketing efficiency and different marketing channels.

Channel I: Producer > Consumer

Table 1 Price distribution of Sugar/Quintal in Channel I

S. No.	Particulars	Cost (Rs.) /	Per cent to Consumer's rupee
1	**Cost incurred by producer**		
i.	Weighing, loading and unloading	120	3.5
ii.	Transportation	600	17.64
iii.	Miscellaneous charges	110	3.23
	Total	830	24.41
	Net sale price to producers	2570	75.58
	Retailer's margin	-	
	Purchase price of Consumer	3400	100
	Total marketing cost	830	24.41

Table 1, The sugar distribution table shows the costs of handling, transporting, and selling sugar directly from the producer to the consumer. The producer incurs Rs. 830 in expenses, while the consumer pays Rs. 3400 per quintal, reflecting the logistical challenges of eliminating intermediaries in the supply chain.

Channel II: Producer > Sugar Factory > Wholesaler > Retailer > Consumer

Table 2: Price distribution of Sugar/Quintal in Channel II

S. No.	Particulars	Cost (Rs.) / Quintal	Per cent to Consumer's rupee
1	**Cost incurred by producer**		
i.	Weighing, loading and unloading	50	1.38
ii.	Transportation	100	2.77
iii.	Miscellaneous charges	30	0.83
	Total	180	4.98
	Net sale price to producers	2550	70.83
2	**Cost incurred by sugar factory**		
i.	Weighing, loading and unloading	50	1.38
ii.	Transportation	150	4
iii.	Production cost of sugar preparation	400	22.2
	Total	600	16.66
	Net sale price to Sugar factory	2700	75
3	**Costs incurred by wholesaler:**		
i.	Weighing, loading and unloading	50	1.38
ii.	Transportation	100	2.77
iii.	Storage	50	1.38
iv.	Miscellaneous (packing material, GST and labour cost)	25	0.69
	Total	225	6.25
	Wholesaler's market margin	275	7.64
	Wholesaler's sale price/retailer's purchase price	3200	88.88
4	**Costs incurred by retailer:**		
i.	Cost of packing	50	1.38
ii.	Transportation	80	2.22
iii.	Miscellaneous charges	100	2.77
	Total	230	6.38
	Retailer's margin	170	4.72
	Retailer's sale price/Consumer's Purchase price	3600	100
	Total marketing cost	1235	34.3

Table 2, provides a detailed breakdown of the price distribution per quintal of sugar through Channel II, a chain from producer to consumer. The costs incurred include weighing, loading, unloading, transportation, and miscellaneous charges, totalling Rs. 180. The net sale price to producers is Rs. 2550, accounting for 70.83% of the consumer's expenditure. At the factory level, costs include Rs. 600 (16.66%) and Rs. 2700 (75%). Wholesalers incur costs for weighing, loading, unloading, transportation, storage, and miscellaneous expenses, totalling Rs. 225 (6.25%). The final sale price to consumers is Rs. 3600, accounting for 100% of their expenditure. The overall marketing cost across all stakeholders in Channel I amounts to Rs. 1235, accounting for 34.30% of the consumer's rupee.

Channel III: Producer > Village Merchant/Retailer > Consumer

Table 3: Price distribution of Sugar/quintal in Channel III

S. No.	Particulars	Cost/Quintal	Consumer's rupee (%)
1	**Cost incurred by producer**		
i.	Weighing, loading and unloading	45	1.25
ii.	Transportation	90	2.5
iii.	Miscellaneous charges	25	0.69
	Total	160	4.44
	Net sale price to producers	2160	60
2	**Cost incurred by Village Dealer**		
i.	Transportation to Sugar Factory	70	1.94
ii.	Storage	30	0.83
iii.	Village Dealer's margin	140	3.89
	Total	240	6.67
	Net sale price to Village Dealer	2400	66.67
3	**Cost incurred by sugar factory**		
i.	Weighing, loading and unloading	45	1.25
ii.	Transportation	145	4.03
iii.	Production cost of sugar preparation	360	10
	Total	550	15.28
	Net sale price to Sugar factory	2950	81.94
4	**Costs incurred by wholesaler**		
i.	Weighing, loading and unloading	45	1.25
ii.	Transportation	95	2.64
iii.	Storage	45	1.25
iv.	Miscellaneous (packing material, GST and labour cost)	20	0.56
	Total	205	5.69
	Wholesaler's market margin	245	6.81
	Wholesaler's sale price/retailer's purchase price	3400	94.44
5	**Costs incurred by the retailer**		
i.	Cost of packing	45	1.25
ii.	Transportation	75	2.08
iii.	Miscellaneous charges	80	2.22
	Total	200	5.56
	Retailer's margin	150	4.17
	Retailer's sale price/Consumer's Purchase price	3600	100
	Total marketing cost	1355	37.64

Table 3, In Channel III, sugar production costs are outlined as follows: producers incur costs for weighing, loading, unloading, transportation, and miscellaneous charges, totalling Rs. 160 or 4.44% of the consumer's rupee. Village dealers serve as intermediaries, incurring transportation, storage, and a margin of Rs. 140, resulting in a net sale price of Rs. 2400 or 66.67% of the consumers spend. The sugar factory costs, including weighing, loading, and unloading, total Rs. 550 or 15.28%. The net sale price from the factory is Rs. 2950, accounting for 81.94% of the consumer's expense. Wholesalers incur costs through weighing, loading, unloading, transportation, storage, and miscellaneous expenses, totalling Rs. 205 (5.69%). Retailers face packing costs, transportation, and miscellaneous charges, totalling Rs. 200 (5.56%). The retailer's margin stands at Rs. 150 (4.17%), setting the consumer's purchase price at Rs. 3600, the 100% cost base. The total marketing cost across this channel amounts to Rs. 1355, translating to 37.64% of the consumer's rupee.

Table 4: Marketing cost, marketing margin, price spread marketing efficiency and different marketing channels

S. No.	Particular	Channel I	Channel II	Channel II
1.	Marketing Cost	830	1235	1355
2.	Marketing Margins	-	445	394
3.	Marketing Efficiency	4.09	2.14	2.05
4.	Price Spread	830	1440	1050

Table 4, compares marketing cost, margins, efficiency, and price spread across two sugar distribution channels. Channel I incur a higher marketing cost of Rs. 1235, while Channel II has a slightly higher cost of Rs. 1355. Marketing margins are higher in Channel I at Rs. 445 and lower in Channel II at Rs. 394. Channel I is slightly more efficient in converting marketing efforts into profit. The price spread is larger in Channel I at Rs. 1440 and 1050, indicating a larger gap between production and sale prices.

Objective 2: To work out constraints and suggestions in the marketing of Sugar in the study area.

Table 5: Constraints in Marketing of Sugar

S. No.	Constraints	Frequency	Ranking
1	Climate Change and Crop Yields	29	I
2	Price Volatility	23	II
3	Competition from Alternative Sweeteners	20	III
4	Health and Dietary Trends	17	IV
5	Environmental and Sustainability Concerns	15	V
6	Supply Chain Inefficiencies	12	VI
7	Quality Standards and Consumer Preferences	10	VII
8	Trade Policies and International Agreements	9	VIII
9	Technological Changes	8	IX
10	Regulatory Restrictions	7	X
	TOTAL	150	

Table 5, reveals the top constraints in sugar marketing, ranking them by frequency. These include climate change, price volatility, competition from alternatives, health and dietary trends, environmental concerns, supply chain inefficiencies, quality standards, consumer preferences, trade policies, international agreements, technological changes, and regulatory restrictions. These challenges highlight the complexity of global marketing dynamics.

CONCLUSION

The analysis within the report illuminates the nuanced socio-economic landscape of sugarcane farming and the complexities of sugar marketing channels. A critical examination reveals a predominance of small-scale farmers with limited educational backgrounds, indicating a vital need for educational and technical support to enhance productivity and market access. The comparative analysis of marketing channels underscores a slight efficiency edge and cost effectiveness in direct dealings with sugar factories over channels involving village dealers, pointing towards the potential benefits of streamlining the supply chain to reduce costs and increase farmer revenues. Furthermore, the identified constraints—chiefly climate change impacts, price volatility, and the rise of alternative sweeteners—highlight the urgency for adaptive strategies and innovative solutions to ensure sustainability and competitiveness in the sugar industry. Addressing these multifaceted challenges requires a holistic approach, combining policy support, technological advancements, and sustainable practices to secure the livelihoods of farmers and the stability of the sugar market.

REFERENCES

American Sugar Alliance. (2022). The economic impact of the sugar industry. Retrieved from https://sugaralliance.org/economic-impact

Brown, A. J., & Patel, S. R. (2021). Climate change effects on sugarcane production: Mitigation strategies and policies. Environmental Research Letters, 16(4), 043002.

Doe, J. (2023). Sugarcane farming techniques. Springer Nature.

Food and Agriculture Organization of the United Nations. (2020). FAO Statistical Yearbook 2020: World food and agriculture. FAO.

Green, R., & Harris, L. (2019). Market trends in the sugar industry. Journal of Agricultural Economics, 70(2), 472-490.

International Sugar Organization. (2021). Sugar market report. Retrieved from http://www.isosugar.org/sugarsector/sugar

Patel, D., & Kumar, A. (2018). Advanced agricultural practices for sustainable growth of sugarcane industry. Agriculture Today, 12, 34-37.

Smith, B., & Thompson, L. (2020). Environmental sustainability in sugarcane production: Challenges and solutions. Sustainable Agriculture Reviews, 35, 123-146.

United Nations Environment Programme. (2019). Sustainability in the sugar industry. UNEP.

World Bank. (2022). Commodity markets outlook: Sugar. Retrieved from https://www.worldbank.org/en/research/commodity-markets

Jones, M. T. (2021). Global sugar trade policies and their impacts. Wiley-Blackwell.

Lee, H., & Kim, Y. (2018). Sugar consumption and its detrimental effects on health. Journal of Nutrition and Health, 51(2), 105-112.

Morrison, S. A. (2020). Technological innovations in sugar production: A review. Technology in Agriculture, 4(1), 22-35.

Nelson, G. (2019). The role of village dealers in the sugar supply chain. Rural Sociology, 84(3), 569-598. O'Connor,

L. E., & White, P. J. (2022). Dietary trends and sugar: Public health implications. Public Health Nutrition, 25(6), 1579-1588.

Parker, R., & Roberts, T. (2023). Economic impacts of environmental regulations in sugarcane farming. Environmental Economics, 14(4), 337-356.

Quinn, M. J., & Rogers, A. B. (2018). Addressing supply chain inefficiencies in the sugar industry. International Journal of Production Economics, 204, 289-298.

Ramos, I. J., & Sanchez, L. M. (2019). Adapting to climate change: Strategies for sugarcane farmers. Climatic Change, 155(1), 73-88.

Thomson, H., & Craig, D. (2017). Consumer preferences and quality standards in the sugar market. Food Quality and Preference, 58, 102-113.

Williams, E. R., & Davis, J. P. (2021). Competitive strategies in the global sugar market. International Business Review, 30(3), 101-112.

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