Study on Marketing of Jaggery in Bijnor District Of Uttar Pradesh

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Abstract: The Jaggery industry is considered as a small scale and cottage industry in India. From time immemorial, sugarcane crop has been known as a cash crop by Indian cultivators and so also preparation of Jaggery. Large numbers of Jaggery production units are operating in Uttar Pradesh State which has a great employment potential. The study is focused on “Marketing of jaggery and its related products in Bijnor district of Uttar Pradesh”. The studied parameters for socio-economic profiling were age, education, size of family and monthly income, beside all of them age and size of family were found non-significant. After analyzing the major findings of study, it was found that high marketing cost and price spread was incurred in the marketing channel in which distant wholesaler was involved. The study aims to explore all the marketing channels involved in marketing of jaggery and its related products. The study area stands among the leading producers of jaggery in Uttar Pradesh. The jaggery and its products were having huge market share in northern India.

Keywords: Jaggery, Marketing, Sugar, Jaggery products.

INTRODUCTION
Jaggery is consumed mostly by the rural population in India which is a natural mixture of sugar and molasses's Jaggery is a natural, traditional sweetener made by the concentration of sugarcane juice. With enhanced standard of living and higher income, the Jaggery demand has shifted to white sugar. Jaggery can be defining as a honey brown coloured raw lump of sugar. It contains all the minerals and vitamins present in sugarcane juice and that is why it is known as healthiest sugar in the world. In some of the South American countries it is known as Panela. At the time of production of sugar, it requires a mix up of chemicals like sulphur dioxide, lime, phosphoric-acid, formic-acid and bleaching agents, and that is why all the contents of sugarcane cannot be found in sugar, whereas Jaggery has all the contents and even the scientists have proved that all the essential vitamins and minerals are missing from sugar as compared to Jaggery. In Ayurvedic way of medicine it is used as medicine, blood purifier and also it prevents disorders of bile.

Sugar cultivation is done on around 4 million hectares of land in India and its production has fluctuated between 230-300 million tonnes in past several years. The 250 billion sugar industry has about 450 sugar mills in India with an average installed capacity of 18 million tones. India is the largest consumer of sugar and second largest producer in the world. 90 per cent of total sugarcane and sugar production in the country is with Maharashtra and Uttar Pradesh alone, accounting for 60 per cent of Indian's total sugar production. As against an average annual rise of 2.5 per cent in world sugar production during the past ten years, global sugar consumption has grown by about 2 per cent per annum, while in India the consumption has been higher at about 3.5 per cent per annum (LKP Research). Uttar-Pradesh is the largest sugarcane producing state in the country. It contributes 44 per cent to the country’s total sugarcane production and is also the largest producer of sugar in the country (Sunil 2005).

The demand for jaggery is steadily growing among the urban, rural and semi-urban areas. There are several applications of jaggery and almost all Indian households use it on day-to-day basis. Market for jaggery is round the year whereas its production is only during the sugarcane season and thus factory works for around 6 to 7 months every year. The India packaged jaggery market size reached INR 55.6 Billion in 2022. Looking forward, IMARC Group expects the market to reach INR 122.1 Billion by 2028, exhibiting a growth rate (CAGR) of 14.1% during 2023-2028. Apart from individual households, it is used in large quantities in restaurants, road-side dhabas, other eateries, hostels and clubs and by caterers. It has shelf-life of more than couple of months. Its production is undertaken at several places but Maharashtra, Uttar Pradesh, Bihar and Tamil Nadu are the leading manufacturers. In view of constantly growing market, it should not be difficult for a new entrant to enter and capture the market.

RESEARCH METHODOLOGY
The present study was conducted in Bijnor district of Uttar Pradesh where Dhampur block was selected for the study. From the total villages 9 villages were selected randomly. The maximum sample size was 54. For collecting relevant, a pretested structure was used. The data collected from the respondents Age, Education, Occupation, Types of houses, Marketing Channels and various costs involved in marketing of jaggery, At their Homes, Work places and in some cases at a common place in the village, the respondents were interviewed. As tool, various different tools were used to analyse the marketing of Jaggery in the study area.

1. Chi-square test
A chi-square statistic tool is one way to show a relationship between two categorical variables. A chi-squared statistic is a single number that tells you how much difference exists between your observed counts and the counts you would expect if there were no relationship at all in the population. It is used for data that consist of variables distributed across various categories and is denoted by $\chi^2$. This formula will be used for identifying the demographic pattern of the producers. The chi-square formula is:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i},$$

where,

$O_i =$ observed value (actual value)

$E_i =$ expected value.

2. **Marketing Cost:**

The total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follows:

$$C = C_f + C_{ml} + C_{m2} + C_{m3} + \ldots + C_{mn}$$

Where,

$C =$ Total cost of marketing

$C_f =$ Cost born by the producer from the time produce leaves the farm till the sale of the produce.

$C_{mn} =$ Cost incurred by the middle men in the process of buying and selling.

Price spread - Price spread is defined as the difference between the price paid by producers and the net price received by the producer for an equivalent quantity of farm produce. It is expressed as percentage of consumer’s price.

Formula-

$$\text{Price spread} = \frac{(\text{Consumer price} - \text{Net price of producer}) \times 100}{\text{Consumer price}}$$

3. **Marketing efficiency:**

Marketing efficiency is total revenue expressed as a percentage of total marketing costs including promotion, product development, and sales expressed as percentage of revenue.

Formula:

$$\text{Marketing Efficiency} = \frac{\text{Revenue}}{\text{Marketing}} \times 100$$

4. **Producer’s share in Consumer’s Rupee**

Its price received by the producer expressed as a percentage of retail price i.e. price paid by the consumer’s rupee.

$$FS = \left( \frac{FP}{CP} \right) \times 100$$

Where,

$PS=$Producer’s share in Consumer’s rupee (percentage)

$P_p =$ Consumer net selling price.

$C_p =$ Consumers price

5. **Garrett’s Ranking Technique**

Constraints perceived and the measures for improvement suggested by the producers in production and marketing of Potato were prioritized by using Garrett’s ranking technique by using the follow formula:

$$\text{Per cent Position} = \frac{100 \times (R_{ij} - 0.50)}{N_j}$$

Where,

$R_{ij}$ is the rank given to the ith item by the jth individual,

$N_j$ is the number of items ranked by the jth individual.

**RESULTS AND DISCUSSIONS**

The magnitude of marketing margins relative to the price of the product indicates the efficiency of the marketing system. The knowledge of marketing cost helps to identify the reasons for high marketing costs and the possible ways of reducing them. The price paid indicates nothing but producers share in Consumer’s rupee which is important for deciding which marketing channel to be selected for selling of their produce. In the study area following marketing channels were identified in marketing of jaggery, they are,
Table 1.1 describes the cost of the marketing of the jaggery under the different marketing channels which were identified during the survey through which the marketing of jaggery was done in the study area.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Channel 1</th>
<th>Channel 2</th>
<th>Channel 3</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rs. /Quintal</td>
<td>Rs. /Quintal</td>
<td>Rs. /Quintal</td>
<td>Rs. /Quintal</td>
</tr>
<tr>
<td>1</td>
<td>Packaging</td>
<td>57.08 (17.27)</td>
<td>55.37 (14.44)</td>
<td>55.69 (10.69)</td>
<td>56.05 (13.67)</td>
</tr>
<tr>
<td>2</td>
<td>Weighing</td>
<td>15.37 (4.65)</td>
<td>14.44 (3.77)</td>
<td>13.78 (2.67)</td>
<td>14.53 (3.54)</td>
</tr>
<tr>
<td>3</td>
<td>Loading</td>
<td>22.83 (6.91)</td>
<td>22.28 (5.81)</td>
<td>22.09 (4.28)</td>
<td>22.40 (5.46)</td>
</tr>
<tr>
<td>4</td>
<td>Unloading</td>
<td>25.03 (7.58)</td>
<td>24.35 (6.35)</td>
<td>24.41 (4.73)</td>
<td>24.60 (6.00)</td>
</tr>
<tr>
<td>5</td>
<td>Transportation</td>
<td>85.85 (25.98)</td>
<td>140.06 (36.31)</td>
<td>266.67 (51.63)</td>
<td>164.19 (40.03)</td>
</tr>
<tr>
<td>6</td>
<td>Market fee</td>
<td>23.62 (7.15)</td>
<td>23.64 (6.16)</td>
<td>27.56 (5.34)</td>
<td>24.94 (6.08)</td>
</tr>
<tr>
<td>7</td>
<td>Commission</td>
<td>95.42 (28.87)</td>
<td>96.13 (25.06)</td>
<td>97.31 (18.85)</td>
<td>96.29 (23.48)</td>
</tr>
<tr>
<td>charges</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Losses</td>
<td>5.27 (1.59)</td>
<td>7.30 (1.90)</td>
<td>8.80 (1.70)</td>
<td>7.12 (1.74)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>330.48 (100.00)</td>
<td>383.58 (100.00)</td>
<td>516.32 (100.00)</td>
<td>410.13 (100.00)</td>
</tr>
</tbody>
</table>

The above table 1.1 showed the cost of marketing of jaggery under different marketing channels. It was found that the marketing cost in Channel 1 was Rs. 330.48 per Quintal, in marketing channel 2 the highest cost was incurred in marketing channel 3 i.e., Rs. 516.32.
The table 1.2 describes the price spread, marketing margin and marketing efficiency of jaggery in the three different channels of marketing.

### Table 1.2 Channel wise price spread, marketing margin and marketing efficiency of jaggery

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Channel 1 Rs./Quintal</th>
<th>Channel 2 Rs./Quintal</th>
<th>Channel 3 Rs./Quintal</th>
<th>Overall Rs./Quintal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Net price received by producer</td>
<td>3567.56 (82.14)</td>
<td>3598.78 (78.58)</td>
<td>3628.93 (75.02)</td>
<td>3598.42 (78.45)</td>
</tr>
<tr>
<td>2</td>
<td>Marketing margin</td>
<td>445.34 (10.25)</td>
<td>597.90 (13.05)</td>
<td>692.37 (14.31)</td>
<td>578.54 (12.61)</td>
</tr>
<tr>
<td>3</td>
<td>Marketing cost</td>
<td>330.48 (7.61)</td>
<td>383.58 (8.37)</td>
<td>516.32 (10.67)</td>
<td>410.13 (8.94)</td>
</tr>
<tr>
<td>4</td>
<td>Price spread</td>
<td>775.82 (17.86)</td>
<td>981.48 (21.43)</td>
<td>1208.69 (24.99)</td>
<td>988.66 (21.55)</td>
</tr>
<tr>
<td>5</td>
<td>Price paid by consumer</td>
<td>4343.38 (100.00)</td>
<td>4580.26 (100.00)</td>
<td>4837.62 (100.00)</td>
<td>4587.09 (100.00)</td>
</tr>
<tr>
<td>6</td>
<td>Marketing efficiency</td>
<td>121.75</td>
<td>127.27</td>
<td>133.31</td>
<td>127.44</td>
</tr>
</tbody>
</table>

*Source: Survey Data*

The above table 1.2 showed the price spread, marketing margin and marketing efficiency of jaggery. The price spread was Rs. 775.82 per quintal in marketing channel 1, Rs. 981.48 in marketing channel 2 and highest in Rs. 1208.69 marketing channel 3. The marketing margin was Rs. 445.34 in marketing channel 1, Rs. 597.90 in marketing channel 2 and highest in marketing channel i.e., Rs. 692.37. The marketing efficiency was highest in marketing channel 3 i.e., 133.31.

To work out producer’s share in consumer’s rupees.

The Table 1.3 describes the Producer’s share in consumer’s rupees (percentage) of the jaggery under the different marketing channels which were identified during the survey through which the marketing of jaggery was done in the study area.

### Table 1.3 Producer’s share in consumer’s rupees of jaggery under different marketing channel

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Channel 1 %</th>
<th>Channel 2 %</th>
<th>Channel 3 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Net price received by producer</td>
<td>82.13</td>
<td>78.57</td>
<td>75.01</td>
</tr>
<tr>
<td>2</td>
<td>Price paid by consumer</td>
<td>692.37</td>
<td>516.32</td>
<td>4837.62</td>
</tr>
<tr>
<td>3</td>
<td>Producer’s share in Consumer’s rupees (%)</td>
<td>82.13</td>
<td>78.57</td>
<td>75.01</td>
</tr>
</tbody>
</table>

*Source: Survey Data*

The above table 1.3 showed the producer’s share in Consumer’s rupees of jaggery. Producer’s share was Rs. 82.13% in marketing channel 1, 78.57% in marketing channel 2 and 75.01% in marketing channel 3. The producer’s share was highest in marketing channel 1 i.e., 82.13%.

**CONCLUSION**

The Jaggery industry is considered as a small scale and cottage industry in India. From time immemorial, sugarcane crop has been known as a cash crop by Indian cultivators and so also preparation of Jaggery. Large numbers of Jaggery production units are operating in the Uttar Pradesh State which has a great employment potential. The India packaged jaggery market size reached INR 55.6 billion in 2022. Looking forward, IMARC Group expects the market to reach INR 122.1 billion by 2028, exhibiting a growth rate (CAGR) of 14.1% during 2023-2028. The study involves the marketing practices, marketing channels, marketing efficiency and cost, marketing of sugarcane’s product. Sugar & jaggery are having high contribution to the prosperity of the nation. Highest marketing cost and price spread was incurred in the marketing channel in which distant wholesaler was involved. The study area stands among the leading producers of jaggery in Uttar Pradesh. The jaggery and its products were having huge market share in northern India. Unavailability of finance at low interest, less space for storage, Unavailability of cold storage, High commission charges, delay in payments, uncertainty of prices are some of the major constraints faced by the Jaggery producers. Commission charges should be reduced, proper control of market committee.
cover commission agents, Payment should be paid immediately after sale of jaggery. Government should declare minimum support price for jaggery. Provision of finance at low interest rate by banks. Availability of steel cane crusher at low cost. Chemical use in jaggery production should be strictly prohibited. Proper grading should be followed. Proper storage facilities are some of the major suggestions to improve the production and marketing of Jaggery products in Bijnor district of Uttar Pradesh.

BIBLIOGRAPHY


18. Bijnor.nic.in
19. Businessworld.in
20. Shodhganga.inflibnet.ac.in
21. Timesofindia.indiatimes.com
22. https://Scholar.google.com
23. https://LinkSpringer.com
26. www.agropages.com
27. www.ipm.ucdavis.edu
28. Wikipedia.com
29. www.bijnoronline.in