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An Analysis on Marketing of Jaggery in Mandya District

Dr. Madegowda. M
Associate Professor of Economics
Government College for Women, Maddur
Mandya District, Karnataka State – 571428.
Mail: vishwasvinayagowda@gmail.com

Dr. Chethana. B
Assistant Professor of Economics
Sri Mahadeshwara Government First Grade College, Kollegala,
Chamarajanagara District, Karnataka State – 571440.
Mail: chethanaeconomics@gmail.com

Abstract

This study examines the marketing dynamics of Organic and Inorganic Jaggery producers in Mandya district, Karnataka, focusing on marketing channels, pricing, costs, and the challenges faced by producers. A sample of 236 jaggery producers, comprising 59 organic and 177 inorganic units, was selected through proportionate random sampling. The primary data, collected via field surveys, were analyzed using statistical methods such as Chi-Square tests and Independent Samples t-tests.

Organic jaggery is predominantly marketed through direct channels involving producers, retailers, and consumers, while inorganic jaggery relies heavily on commission agents and wholesale traders. The analysis also highlights the higher marketing costs for organic jaggery, with a statistically significant difference between the two types. Organic jaggery incurs more expenses related to promotion, distribution, and packaging, while inorganic jaggery benefits from relatively lower costs. Despite these differences, both organic and inorganic producers face common challenges, including poor transportation infrastructure, high transportation costs, and inadequate storage and grading facilities.

KEYWORDS: Organic Jaggery, Inorganic Jaggery, Marketing Cost, Marketing Channel.

Introduction

Jaggery is also known as "gur" in some regions, is a traditional form of unrefined sugar commonly produced and consumed in many parts of the world. It is made from the sap of various plants, predominantly sugarcane. Jaggery holds significant cultural, culinary, and nutritional value, often being preferred over refined sugar due to its perceived health benefits and natural production process. In recent years, there has been a growing global interest in healthier and more sustainable food alternatives, driving the demand for traditional products like jaggery. This surge in demand, has opened new opportunities for jaggery in the market.

An analysis of the marketing of jaggery involves examining various aspects such as its distribution, branding, packaging, and pricing. It aims to understand the dynamics of the jaggery market, identify key challenges and opportunities, and devise effective strategies to promote its consumption and market penetration. The marketing landscape for jaggery in India is not without its challenges. Despite its nutritional benefits and cultural significance, jaggery faces stiff competition from other sweeteners. Moreover, issues related to quality control, standardization, and distribution pose significant hurdles for producers and marketers alike.

India has got many marketing centers for Jaggery. Major marketing centers are Muzaffarnagar in Uttar Pradesh, Kolhapur in Maharashtra, Anakapalle in Andra Pradesh and Mahalingapur & Mandya in Karnataka. Generally, Jaggery will not reach the consumers directly from the producers. Since production, marketing and consumption happen at different places there are middleman between the producers and consumers. In Jaggery marketing there are various types markets like daily market, weekly market and storage market etc. India's Jaggery has demand in international market. As the major producer of Jaggery, the country has been recognized as one of the leading traders and exporters of Jaggery to the world (Bhagyashree, 2015). The Jaggery producers sold their produce soon after processing if prices were favourable, due to cash shortages and indebtedness to dealers. Only a few respondents exported their produce, and the majority sold it to wholesalers through commission brokers in the usual market yard. Hence it was suggested that there should be declaration of the minimum support price for jaggery, introduction of electronic weighing machines, reduction of commission rates and cold storage facilities should be improved (Anuse *et al*. 2014).

Jaggery is produced all over the country, wherever sugarcane is produced. Similarly, it is consumed in all parts of country. It therefore, becomes very difficult for a producer to trace the consumer, for the fulfilment of Jaggery consumption in large or small quantities. The Jaggery produced at various places will be brought by the producers to a centralized place called as market.

These farmers relied heavily on different marketing channels to sell their product. A marketing channel is described as the set of people, organizations, and activities that work together to transfer goods from the point of production to the point of consumption. The primary purpose of a marketing channel is to create a connection between the organization that creates a product or service and prospective customers who may want to purchase it. With this backdrop the present study investigates the various channels of Jaggery marketing, marketing cost, price and problems associated with the marketing of jaggery.

Objectives of the Study

1. To compare the marketing channels and varieties of Organic and Inorganic Jaggery in the study area.
2. To study the price level and marketing cost of Organic and Inorganic Jaggery.
3. To explore the problems of Organic and Inorganic Jaggery marketing.

Hypothesis of the Study

1. There is an association between the type of jaggery unit (Inorganic vs Organic) and the opinion about price fluctuation.
2. There is a significant difference in marketing cost between Organic and Inorganic Jaggery Units.

Methodology

The present study is based on primary data collected from the field survey using interview schedule. Mandya district of the Karnataka state is considered as the research area for the purpose of study. In Mandya district four taluks namely, Maddur, Mandya, Pandavapura, and Srirangapatna are considered. Because large number of Jaggery units located in these taluks. The primary data collected from both Organic and Inorganic Jaggery producers of the study area. The sample units are selected based on proportionate random sampling method.

Out of 605 Jaggery units in the study area 150 are Organic Jaggery units and 455 are Inorganic Jaggery units. As per the sample size estimation using finite population formula 236 Organic and Inorganic Jaggery producers were considered for this study. Out of these 236 producers 59 Organic Jaggery and 177 Inorganic Jaggery producers have interviewed.

Primary data has been collected from the Organic and Inorganic Jaggery producers as mentioned in Table 1. Sample units are distributed proportionately among taluks.

Table 1: Classification of Study Area

District	Taluk	Organic Jaggery Units	Inorganic Jaggery Units	Total
Mandya	Maddur	08	23	31
	Mandya	25	57	82
	Pandavapura	16	66	82
	Srirangapatna	10	31	41
Total		**59**	**177**	**236**

The appropriate statistical techniques namely, Independent Sample t test and Chi Square test have been used for the analysis.

Results and Discussion

This part examines the marketing of various kinds of Organic and Inorganic Jaggery, as well as the locations of sales, marketing channels, costs, and problems related to Jaggery marketing, keeping in mind the study's goal.

Table 2: Marketing of Varieties of Organic Jaggery in the Study Area

Sold to	Acchu			Aani Acchu			Chakke			Bucket			Powder		
	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent
Commission Agent	3	5.08	6.98	1	1.69	8.33	2	3.38	40	1	1.69	50	-	-	-
Wholesale Traders	12	20.34	27.91	5	8.47	41.67	1	1.69	20	1	1.69	50	3	5.08	75
Retail Traders	13	22.03	30.23	4	6.78	33.33	1	1.69	20	-	-	-	-	-	-
Consumers	9	15.25	20.93	1	1.69	8.33	-	-	-	-	-	-	-	-	-
Organic centers	6	10.16	13.96	1	1.69	8.33	1	1.69	20	-	-	-	1	1.69	25
Total	43	72.88	100	12	20.34	100	5	8.47	100	2	3.39	100	4	6.78	100
NA	16	27.12	-	47	79.66	-	54	91.53	-	57	96.61	-	55	93.22	-
Total	**59**	**100**	**-**	**59**	**100**	**-**	**59**	**100**	**-**	**59**	**100**	**-**	**59**	**100**	**-**

Source: Primary Data, NA: Not Applicable

The table 2 presents the marketing distribution of various types of organic jaggery (Acchu, Aani Acchu, Chakke, Bucket, and Powder) to different buyer categories, including Commission Agents, Wholesale Traders, Retail Traders, Consumers, and Organic Centers. The data reflects how organic jaggery is sold in the study area.

Acchu jaggery is the most popular, primarily bought by Wholesale Traders (20.34%) and Retail Traders (22.03%). Aani Acchu also sees significant purchases from Wholesale Traders (8.47%) and Retail Traders (6.78%), but it has a smaller market compared to Acchu. Chakke jaggery has very limited sales, mainly to Commission Agents (3.38%) and Wholesale Traders (1.69%). No purchases are reported from Consumers. Bucket jaggery is a niche product, purchased only by Commission Agents and Wholesale Traders. Powdered jaggery is primarily bought by Wholesale Traders, with some purchases by Organic Centers. Overall, Acchu and Aani Acchu are the dominant varieties, with Wholesale Traders being the primary buyers. Chakke, Bucket, and Powdered jaggery have limited market penetration, primarily among specialized traders and organic centers.

Table 3: Marketing of Varieties of Inorganic Jaggery in the Study Area

Sold to	Acchu			Aani Acchu			Chakke			Bucket			Unde			Powder		
	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent	Frequency	Percent	Valid Percent
APMC	54	30.51	59.34	5	2.82	12.2	17	9.60	51.52	8	4.52	100	-	-	-	-	-	-
Commission Agent	20	11.3	21.98	34	19.21	82.93	4	2.26	12.12	-	-	-	1	0.56	100	8	4.52	100
Retail Traders	8	4.52	8.79	1	0.56	2.44	3	1.69	9.09	-	-	-	-	-	-	-	-	-
Wholesale Traders	9	5.08	9.89	1	0.56	2.44	9	5.08	27.27	-	-	-	-	-	-	-	-	-
Total	91	51.41	100	41	23.16	100	33	18.64	100.00	8	4.52	100	1	0.56	100	8	4.52	100
NA	86	48.6	-	136	76.84	-	144	81.36	-	169	95.48	-	176	99.44	-	169	95.48	-
Total	**177**	**100**	-	**177**	**100**	-	**177**	**100**	-	**177**	**100**	-	**177**	**100**	-	**177**	**100**	-

Source: Primary Data, NA: Not Applicable

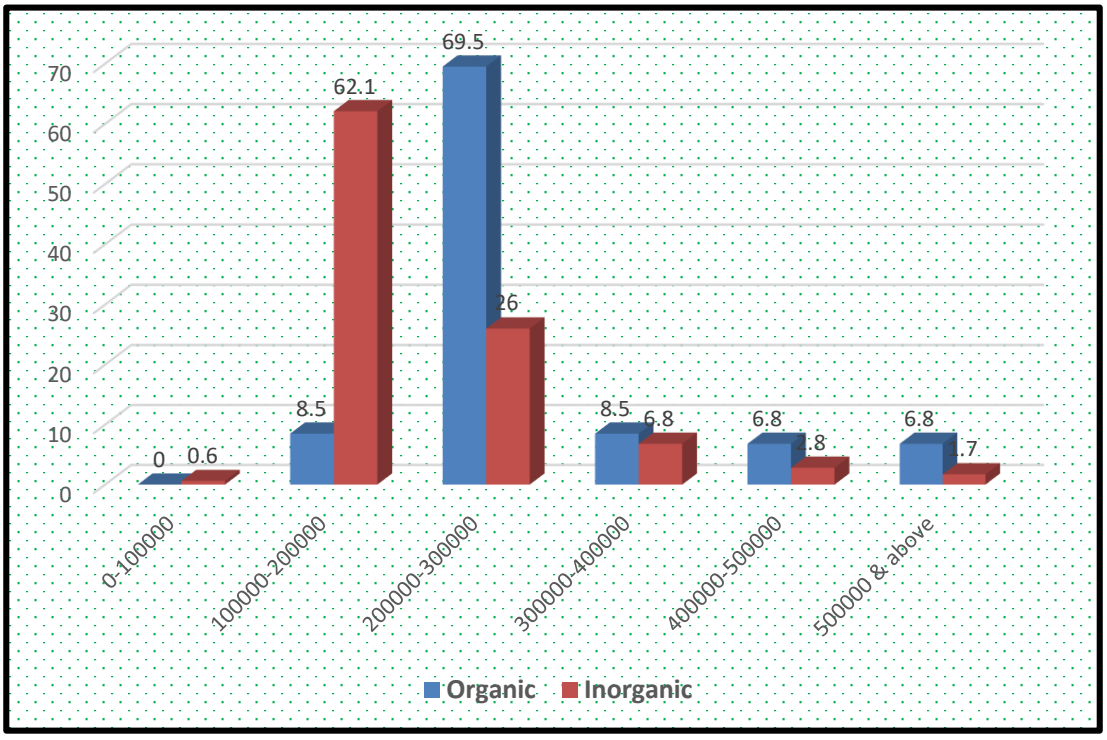
The table 3 provides an overview of the marketing distribution of six types of inorganic jaggery (Acchu, Aani Acchu, Chakke, Bucket, Unde, and Powder) across different buyer categories. Acchu Jaggery is predominantly bought by APMC (30.51%) and Commission Agents (11.3%), with small purchases from Retail Traders and Wholesale Traders. Aani Acchu Jaggery sees most purchases from Commission Agents. APMC and others purchases a small portion. Chakke Jaggery is mostly purchased by APMC, with minor purchases from Commission Agents and Wholesale Traders. Bucket, Unde and Powder Jaggery have limited distribution. Overall, APMC and Commission Agents are the key buyers for inorganic jaggery, while Retail Traders and Wholesale Traders play a minor role in the market.

Table 4: Total Income Received by Jaggery Producers from Sales of Organic and Inorganic Jaggery (Rs. Per Week)

Total Income	Organic	Percent	Inorganic	Percent
0-100000	0	0	1	0.6
100000-200000	5	8.5	110	62.1
200000-300000	41	69.5	46	26.0
300000-400000	5	8.5	12	6.8
400000-500000	4	6.8	5	2.8
500000 & above	4	6.8	3	1.7
Total	**59**	**100.0**	**177**	**100.0**

Source: Primary Data

Figure 1: Percentage of Total Income Received by Jaggery Producers from Sales of Organic and Inorganic Jaggery (Rs. Per Week)



Source: Primary Data

The table 4 and figure 1 provide a comparison of the total weekly income of organic and inorganic jaggery producers. It breaks down the income into specific ranges, showing the distribution across different income brackets for both types of jaggery. For organic jaggery producers, the majority (69.5%) earn between Rs. 200,000 and Rs. 300,000 per week. This is the most significant income range, indicating that organic jaggery production tends to generate a moderate to high income for most producers. A smaller portion of producers earn between Rs.

100,000 and Rs. 200,000 (8.5%) and Rs. 300,000 and Rs. 400,000 (8.5%). There are also a few producers (6.8%) who earn between Rs. 400,000 and Rs. 500,000 and above Rs. 500,000. In contrast, the income distribution for inorganic jaggery producers is different. A large number (62.1%) earn between Rs. 100,000 and Rs. 200,000, and 26% earn between Rs. 200,000 and Rs. 300,000. Smaller proportions of producers fall into higher income categories, with only 2.8% earning between Rs. 400,000 and Rs. 500,000, and just 1.7% earning above Rs. 500,000.

Table 5: Marketing Channels of Jaggery

Market Channel	Organic		Inorganic	
	Frequency	Percentage	Frequency	Percentage
Channel I	8	13.5	150	84.7
Channel II	26	44.1	17	9.6
Channel III	19	32.2	12	6.7
Channel IV	9	15.2	0	0

Source: Primary Data

Note: Channel-1: Producer, commission agent, wholesaler, retailer and consumer.
Channel-II: Producer, wholesaler, retailer, consumer.
Channel-III: Producer, retailer, consumer.
Channel-IV: Producer, consumer.

The table 5 provides data on the marketing of organic and inorganic jaggery across four market channels. The frequencies and percentages are given for each channel, showing the extent to which jaggery marketing channels are used. Inorganic jaggery marketing in Channel I is highly dominant (84.8%). This indicates that paid advertising, promotions, or other commercial marketing techniques are the primary method used to sell jaggery in this channel. Whereas it is only 13.9% in case of organic jaggery marketing. Organic jaggery marketing using both Channel II and III is very high. The relatively high organic marketing percentages in Channel II (44.1%) and Channel III (32.2%) suggest that these channels rely heavily on direct relationships between producers, retailers, and consumers. This is because jaggery, as a traditional and health-oriented product, is often marketed through personal connections and local networks where the product's quality and authenticity can be emphasized directly to consumers.

Table 6: Results of Chi-Square Test for Opinion about Price Fluctuation of Jaggery

Jaggery Units	Opinion about Price Fluctuation			
		No	**Yes**	**Total**
Inorganic	Frequency	1	176	177
	Expected Frequency	43.5	133.5	177
	Row Percentage	0.56	99.44	100
Organic	Frequency	57	2	59
	Expected Frequency	14.5	44.5	59
	Row Percentage	96.61	3.39	100
Total	Frequency	58	178	236
	Expected Frequency	58	178	236
	Row Percentage	24.58	75.42	100
Pearson chi2(1)		220.2118	**Prob**	0.000***

Source: Values Computed by Researcher using Primary Data
Note: *, ** and *** indicate significance level one, five and ten percent respectively.

Opinion about price fluctuations among jaggery units presented in the table 6. The Pearson Chi-Square value of 220.2118 and the p-value of 0.000 (which is less than 0.05) indicate that there is a statistically significant association in the opinions about price fluctuation between inorganic and organic jaggery producers. For Inorganic jaggery, a large majority (99.44%) of producers believe there is a price fluctuation. In contrast, for Organic jaggery, the majority (96.61%) do not believe in price fluctuation.The results suggest a marked contrast in producer perceptions of price fluctuation between inorganic and organic jaggery. Producers of inorganic jaggery overwhelmingly report price fluctuations in selling, while those of organic jaggery mostly do not perceive significant price changes. This difference is statistically significant, implying that the type of jaggery (inorganic vs. organic) has a strong influence on consumer opinions regarding price stability.

Table 7: Marketing Cost of Organic and Inorganic Jaggery (Rs. Per Quintal)

Marketing Cost	Organic Jaggery		Inorganic Jaggery	
	Frequency	**Percent**	**Frequency**	**Percent**
0-100	28	47.5	92	52
100-200	24	40.6	81	45.8
200 & above	7	11.9	4	2.2
Total	59	100	177	100

The Table 7 exhibits that inorganic jaggery has a higher percentage of its marketing costs in the lower range (Rs. 0-100), suggesting that it may be marketed more cost-effectively compared to organic jaggery. A larger proportion of organic jaggery has marketing costs in the higher range (Rs. 100-200 and Rs. 200 and above), reflecting that organic products may involve higher promotional or distribution expenses. Both types of jaggery have relatively small percentages in the highest marketing cost range (Rs. 200 and above), indicating that extremely high marketing expenses are less common for both organic and inorganic jaggery.

Table 8: Results of Independent Sample Test comparing the Marketing Cost between Organic and Inorganic Jaggery Units (Rs. per quintal)

Marketing Cost	N	Mean	Std. Deviation	Std. Error Mean
Organic	59	131.1695	67.98254	8.85057
Inorganic	177	105.6949	56.91998	4.27837

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.218	.271	2.831	234	.005***	25.47458	8.99764	7.74785	43.20130
Equal variances not assumed			2.591	86.713	.011**	25.47458	9.83042	5.93465	45.01450

Source: Values Computed by Researcher using Primary Data

Note: *, ** and *** indicate significance level one, five and ten percent respectively.

The Table 8 shows the results of Independent Sample 't' Test which is used to find the difference in marketing cost between Organic and Inorganic Jaggery producers. The p-value of

Levene's test is 0.271, so we accept the null hypothesis of Levene's test and that we should look at the "Equal variances not assumed" row for the t test results.

It is observed from the result that the probability value is less than 0.01 which indicates that the result is statistically significant at 1% level of significance. Hence it is concluded that there is a significant difference in marketing cost between Organic and Inorganic Jaggery producers. The average marketing cost per quintal of Organic Jaggery units is higher than Inorganic Jaggery units.

Table 9: Marketing Related Problems Faced by Jaggery Producers

SI.No	Problems	Organic		Inorganic	
		Yes	No	Yes	No
1	Poor transportation facilities	59	0	176	1
2	Non-availability of market related information	56	3	177	0
3	Faulty weighment	51	8	174	3
4	High rate of commission	49	10	175	2
5	High transportation cost	55	4	171	6
6	Lack of Grading facilities	54	5	176	1
7	High cost of packaging materials	55	4	169	8
8	Shortage of labour (for loading and unloading)	59	0	162	15
9	Lack of warehouse facility for storage	58	1	175	2
10	Various overhead charges (like weighment charges, hamali etc.,)	52	7	168	9
11	Lack of awareness about marketing places	56	3	175	2

Source: Primary Data

The Table 9 highlights various marketing related challenges faced by jaggery producers, distinguishing between organic and inorganic methods. Both groups experience common issues. For organic producers, transportation and labor shortages are more pronounced, likely due to the remote locations where organic jaggery is often produced, making logistics and access to workers more difficult. Additionally, these producers face challenges with market awareness, indicating that they may not have as much access to information about where to sell their products or how to reach larger markets.

In contrast, inorganic producers, while also facing challenges with transportation costs, struggle more with the absence of proper grading facilities, which could impact the ability to standardize product quality and set competitive prices. The lack of warehouse facilities is another common issue for both organic and inorganic producers, affecting their ability to store jaggery efficiently and safely, which can lead to wastage or delays.

To address these issues, both types of producers need better market information, infrastructure improvements (especially in transportation and storage), and more efficient ways of handling labor and overhead costs. For organic producers, enhancing market awareness and access could be particularly important for expanding their reach, while inorganic producers might focus more on improving grading systems. Ultimately, solving these issues could lead to better profitability, efficiency, and growth for jaggery producers across both categories.

Conclusion

This study provides an insightful comparison of the marketing channels, costs, and problems faced by Organic and Inorganic Jaggery producers in Mandya district, Karnataka. The analysis reveals significant differences in marketing costs and income levels between the two types of jaggery. Organic jaggery producers generally experience higher income levels, reflecting the premium prices associated with organic products. In contrast, Inorganic jaggery producers dominate the traditional market channels, with a higher proportion of sales directed to APMC and commission agents, indicating a more price-sensitive and bulk-oriented market structure. The study also uncovers that both form of jaggery incurs higher marketing costs, particularly in the Rs. 0-200 range per quintal. The significant differences in the perception of price fluctuations between Organic and Inorganic Jaggery producers further emphasize the contrasting market dynamics and price stability within these segments.

Additionally, both Organic and Inorganic producers face common challenges such as poor transportation facilities, high transportation and packaging costs, and lack of storage infrastructure. However, organic producers are more affected by labor shortages and transportation problems, while inorganic producers struggle more with grading and standardization problems. To improve profitability and sustainability, both types of producers require better access to market information, improved infrastructure, and a focus on reducing logistical and operational challenges. Addressing these issues can help streamline the marketing

process and contribute to the growth and competitiveness of both Organic and Inorganic Jaggery industries in the study area.

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