Archives of Current Research International

Volume 24, Issue 6, Page 447-455, 2024; Article no.ACRI.120368
ISSN: 2454-7077

Marketing of Fruits and Vegetables in the Agricultural Produce Marketing Committee, Vashi, Navi Mumbai

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: https://doi.org/10.9734/acri/2024/v24i6802

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/120368

Original Research Article

Received: 24/05/2024
Accepted: 26/07/2024
Published: 02/08/2024

ABSTRACT

The research focuses on understanding the marketing dynamics and identifying areas for improvement in the supply chain. This study examines the sales and purchase practices, marketing costs, and factors influencing prices in the Agricultural Produce Market Committee (APMC) Vashi market for fruits and vegetables. Data were collected from the 30 farmers, 40 wholesalers/commission agents and 30 retailers through structured questionnaires, between January 2024 and April 2024 and a purposive sampling technique was chosen to gather specific information. The findings reveal that middlemen, such as Local Agent (35%), pre-harvest contractors (15%) and commission agents (12.5%), play a significant role in the supply chain, leading to increased costs and reduced profits for farmers. The study also highlights notable variations in marketing costs, margins, and price spreads across different commodities. Market competition emerges as a crucial factor influencing prices, emphasizing the need for a competitive market environment.

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Cite as: *Bhadani, Samirkumar R., and Snehal Mishra. 2024. "Marketing of Fruits and Vegetables in the Agricultural Produce Marketing Committee, Vashi, Navi Mumbai". Archives of Current Research International 24 (6):447-55. https://doi.org/10.9734/acri/2024/v24i6802.*

Keywords: Agricultural marketing; sales and purchase practices; marketing cost; marketing margin; price influencing factors; marketing efficiency.

1. INTRODUCTION

India's diverse geography and climate ensure the availability of numbers of a variety of fresh fruits and vegetables [1]. India has become the second-largest producer of fruits and vegetables globally [2]. According to the Department of Agriculture & Farmers Welfare's First Advance Estimate for 2023-24, India produced 112.077 million metric tonnes of fruits and 209.388 million metric tonnes of vegetables [3], but when it comes to market marketing is a very challenging task for a farmer. Agriculture marketing refers to all of the activities associated with the supply of agricultural inputs and outputs, including procurement, collection, grading, storage, food and agro-processing, transportation, financing, and selling of agricultural goods [4].

Kohls and Uhl (1990) divided marketing functions into three categories: exchange functions (buying and selling), physical functions (storage, transportation, and processing), and facilitation functions(standardization, financing, risk bearing, and market intelligence) [5]. Nowadays the exchange or trade (buying and selling) of fruits and vegetables can be both regulated and unregulated. A regulated market is defined as "A market that aims to eliminate unhealthy and unscrupulous practices by providing needful facilities to the producers and sellers in the market and safeguarding their interest in market functions" [6]. In regulated markets, there are systems in place to monitor quality standards, pricing, and distribution. One common route is through Agricultural Produce Market Committees (APMC), These APMCs were established to ensure fair trade practices and protect the interests of both farmers and consumers. The regulated markets provide a platform for farmers to sell their produce to licensed traders or commission agents. These regulated markets provide a structured environment for transactions, ensuring fair prices and quality standards. [7]. The choice of marketing channel depends on various factors such as the distance to markets, availability of infrastructure or storage facilities, and access to technology [8]. But currently distribution channel is still long because farmers don't directly come to APMC. middleman is an unavoidable pit of market function, and also, fluctuation in daily prices and a large margin between the wholesale and retail prices is leading the high consumer prices, so only a small proportion of the consumer rupee reaches the farmers [9,10]. Thus, in light of this issue, these studies examine the various aspects of fruit and vegetable marketing in selected commodities in APMC Vashi, Navi Mumbai. Such as sales and purchase practices, marketing cost, marketing margin, marketing efficiency and factor influencing the price of fruits and vegetables.

Maharashtra has one of the most extensive APMC networks in India, with over 306 APMCs spread across the state [11]. The Mumbai APMC is one of the largest agricultural markets in Maharashtra. MAPMC is an autonomous agency established in 1977 under "The Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963" to regulate the marketing of various types of agricultural produce. MAPMC was established primarily to meet the marketing needs of farmers by providing a platform for selling agricultural produce in various markets and assisting farmers in obtaining a higher price for their produce. The commodities under regulation of MAPMC are fruits, vegetables, food grains, spices, dry fruits, pulses, edible oil & oilseeds [12]. In the Vashi Market, the daily arrivals of fruits and vegetables vary, with significant increases observed in oranges and mangoes from February to May. In the year 2023-24, total arrivals were 22,646 tonnes of oranges and 103,870 tonnes of mangoes. In the onion and potato market, the arrivals were 265,602 tonnes of potatoes and 284,072 tonnes of onions [13].

2. METHODOLOGY

Non-probability sampling method has been adopted to obtain responses from the respective respondents. The study was conducted in APMC Vashi, fruits market and Onion potato market was selected for this study. Data were collected from the farmers, wholesalers/commission agents and retailers through structured questionnaires and a purposive sampling technique was chosen to gather specific information from 30 farmers, 40 wholesalers/commission agents and 30 retailers from the fruits and onion potato market. The fruits market sample includes 18 farmers, 20 wholesalers/commission agents, and 15 retailers, whereas the onion potato market sample includes of 12 farmers, 20 wholesalers /commission agents, and 15 retailers.

3. ANALYTICAL TOOLS

3.1 Marketing Cost

The total cost incurred by farmers and intermediaries engaged in the marketing process for fruits and vegetables was calculated as [14]:

$$C = CF + CM_1 + CM_2 + CM_3 + \text{----------} + CM_n$$

Where, C = Total cost of marketing, CF = Cost borne by the producer in the marketing of fruits and vegetables, CM_1, …. , CM_n = Cost incurred by different market intermediaries.

3.2 Marketing Margin

The marketing margin of market intermediaries is computed as the difference between the total cost incurred by the intermediaries in purchasing the produce from the producer along with the cost of marketing and selling price of the market intermediaries and was calculated as [15]:

$$A_{mi} = P_{ri} - (P_{pi} + C_{mi})$$

Where, A_{mi} = Absolute marketing margin of the i^{th} market intermediaries, P_{ri} = Selling price of the i^{th} market intermediaries, P_{pi} = Purchase price of the i^{th} market intermediaries, C_{mi} = Marketing cost incurred by the i^{th} market intermediaries.

3.3 Price Spread

Price spread in the context of agricultural marketing refers to the difference between the price paid by the final consumer for a specific quantity of farm produce and the price received by the producer for the same amount of the product. To analyze the price spread the following formula was used [16].

$$PS = Cp - Pf$$

Where; PS = Price Spread, Cp = Consumer price, Pf = Price received by farmer

3.4 Marketing Efficiency

The evaluation of marketing efficiency in selected channel in the study area will be calculated using Acharya's approach [17].

$$\text{Marketing Efficiency} = \frac{Pf}{Mc + Mm}$$

where P_f = Net price received by the farmer, Mc = Total marketing cost, Mm = Total marketing margin.

3.5 Weighted Average Mean

Weighted average mean was used to analyze factors influencing the prices of Fruits and Vegetables [18]. Factors for this objective were taken from Gandhi and Namboodiri research paper (2004) [19].

$$\text{Weighted Average Mean}(X) = (F1X1 + F2X2 + F3X3 + F4X4 + F5X5)/Xt$$

Where F = Weight given to each response

X = Number of responses
Xt = Total number of responses

4. RESULTS AND DISCUSSION

4.1 Profile of Sample Respondents

The study analysed the education and experience of farmers, wholesalers/commission agents, and retailers in the Vashi APMC market. Among the farmers, only a few of them (3.33%) had an education of higher secondary and above, and more than half those had primary and secondary education (70%). All wholesalers/commission agents in the markets examined formal education, with a considerable majority having a secondary and higher secondary education. Not any retailer had taken education above higher secondary and most of them had education at primary and secondary levels (Table no. 1). Thus, in the Vashi market, the level of education was highest among the wholesalers/commission agents, followed by the retailers, and lastly the farmer.

Table No. 2 shows that more than 90 percent of farmers had more than 5 years of experience, while 75 percent of wholesalers/commission agents had more than 10 years of experience in their current profession. Similarly, around 57 percent of retailers had more than ten years of experience in their respective fields. Only 6.67 percent of farmers, 15 percent of wholesalers/commission agents, and 3.33 percent of retailers had less than 5 years of expertise in their field. Thus, the majority of the sample respondents in the Vashi markets had years of experience in their current occupation.

Table 1. Educational level of respondents

(Percentage)

Type of Respondents	Illiterate	Primary	Secondary	Higher Secondary	Above Higher Secondary	Total Sample
Farmer						
Fruits	16.67	27.77	38.89	11.11	5.56	100
Vegetable	25	50	25	0	0	100
Total	20	36.67	33.33	6.67	3.33	100
wholesalers/commission agents						
Fruits	0	20	25	40	15	100
Vegetable	0	20	40	30	10	100
Total	0	20	32.5	35	12.5	100
Retailer						
Fruits	0	53.33	26.67	6.67	13.33	100
Vegetable	13.33	33.33	33.33	20	0	100
Total	6.67	43.33	30	13.33	6.67	100

Table 2. Experience of respondents

(Percentage)

Type of Respondents	Less than 5 Years	5 to 10 Years	10 to 20 Years	20 to 30 Years	Above 30 Years	Total Sample
Farmer						
Fruits	0	38.87	27.78	33.33	0	100
Vegetable	16.677	41.67	33.33	8.33	0	100
Total	6.67	40	30	23.33	0	100
wholesalers/commission agents						
Fruits	10	10	45	35	0	100
Vegetable	20	10	30	40	0	100
Total	15	10	37.5	37.5	0	100
Retailer						
Fruits	0	46.67	33.33	13.33	6.67	100
Vegetable	6.67	33.33	33.33	26.67	0	100
Total	3.33	40	33.33	20	3.33	100

4.2 Sales and Purchase Practices

The Sales and Purchase practices of various regulated markets changed across the country. The pattern of sale and purchase of fruits and vegetables in the Vashi market is shown in Table 3, showing that wholesalers and commission agents purchased fruits from pre-harvest contractors (30%), farmers (25%), and local agents (20%). Notably, mango farmers mostly sold their produce to pre-harvest contractors, who then sold it through commission agents. Many wholesalers and commission agents entered into formal or informal (for one or two years) contracts with farmers to secure produce. Wholesalers cum commission agents mainly sold to retailers (60%), while many also sold to other wholesalers (26.67%) in the APMC market. Retailers mostly sold to consumers, but a few, located far from the market, sold to smaller retailers who could not access the market directly.

The findings indicated a significant shift in the sales and purchase practices of farmers and market players in the APMC market. Farmers, who previously sold their produce directly in the APMC market, now rely on middlemen, such as pre-harvest contractors and commission agents, due to time constraints and the need to focus on farming activities. This increased reliance on middlemen stretched the supply chain, leading to increased costs and reduced profits for farmers.

One major factor determining the receiving of a fair price by producers is the method of sale followed in the markets [20]. The sales method was used by farmers and commission agents affected the final pricing for consumers. Mainly three methods were used for sales or purchasing fruits and vegetables in APMC market Vashi, such as simple transection, Open auction and Hatta sales. Hatta sales is legally not permitted to be practiced in the regulated

markets; however, it is learned that Hatta sales are commonly practiced in the fruit and vegetable market. The major reason it was practiced was that wholesalers in the market strongly encouraged it. According to them, the number of retail customers visiting the A.P.M.C market had increased significantly. If wholesale buyers' prices were negotiated by talking or discussing loudly, retail purchasers would want a comparable price, which would be unacceptable to both wholesale buyers and sellers. So, the Hatta technique was commonly used in the market to keep wholesale pricing private [21].

4.2.1 Cost of marketing

The cost of marketing cost varied for each commodity and stage of the supply chain. In Vashi Fruits market, it was observed that transportation costs were sometimes borne by farmers and sometimes by wholesaler cum commission agents, depending on the type of deal. For fruits, transportation costs were included in the farmers' expenses for this study, while for onions and potatoes, transportation costs were mostly covered by wholesaler cum commission agents. The entry fee to the market was not determined by quantity but by the type of vehicle, ranging from Rs. 25 to 150 in fruits market and Rs. 15 to 100 in Onion potato market; however, it was negligible and included in transportation costs. Retailers incurred various expenses such as loading charges for transport out of the APMC and a 1% market charge, which comprised 0.75% market fee, 0.05% supervision charges, and 0.20% Navi-Mumbai Municipal Surcharge [22]. Table 4 show that various expenses incurred by various stakeholders in the Vashi APMC market for the chosen commodities. The primary cost for mangoes was transportation and packing. Alphonso Mangoes predominantly arrived from Ratnagiri, Devgad, and other southern regions, leading to high transportation

Table 3. From whom purchased or to whom sold

Particulars	Fruits	Vegetable	Total	Fruits	Vegetable	Total
	Number of Responses			Percentage Distribution		
To whom Farmer Sold						
Wholesaler cum commission agents	18	12	30	100	100	100
From whom Wholesaler cum Commission Agent Purchased						
Farmer	5	6	11	25	30	27.5
Local Agent	4	10	14	20	50	35
Pre -harvest Contractor	6	0	6	30	0	15
Collection Center (Traders)	0	3	3	0	15	7.5
Wholesaler cum Commission Agent	4	1	5	20	5	12.5
Importer (Cold Storage)	1	0	1	5	0	2.5
Total	20	20	40	100	100	100
To whom Wholesaler cum Commission Agent Sold						
Other Wholesaler	6	2	8	30	20	26.67
HoReCa	2	0	2	10	0	6.67
Retailers	10	8	18	50	80	60
Export	2	0	2	10	0	6.67
Total	20	10	30	100	100	100
From whom Retailer Purchased						
Wholesaler cum Commission Agent	15	15	30	100	100	100
To Whom Retailer Sold						
Retailers	3	2	5	20	13.33	16.67
Consumer	12	13	25	80	86.67	83.33
Total	15	15	30	100	100	100

expenses. Mangoes were packed in wooden boxes, costing approximately Rs. 100 for 5 to 6 dozen. Oranges were primarily sourced from Nagpur (the main source) and Ahmednagar (March - April), packaged either loosely or in net bags. Potatoes mainly came from Uttar Pradesh (Agra), Madhya Pradesh, and Gujarat, while onions were primarily sourced from Nashik. Potatoes and onions were packed in gunny bags.

The Table No. 5 presents the Price Distribution and Margins in the Supply Chain for mangoes, oranges, potatoes, and onions, including net prices received by farmers, costs incurred by them, and subsequent pricing through wholesaler cum commission agents and retailers. Farmers earned Rs. 14,000 per quintal for mangoes, Rs. 2200 per quintal for oranges, Rs. 1020 per quintal for potatoes, and Rs. 1250 per quintal for onions. After costs and commissions, the final retail prices varied, with mangoes fetching Rs. 27000 per quintal, oranges Rs. 6000 per quintal, potatoes Rs. 2500 per quintal, and onions Rs. 3000 per quintal, reflecting the supply chain's economic dynamics.

4.2.2 Price spread and marketing efficiency of selected fruits and vegetables

In the Table No. 6, the marketing costs, marketing margins, price spreads, and marketing efficiency for mangoes, oranges, potatoes, and onions were analyzed. The costs, margins, and spreads were all measured in Rs per quintal. The findings revealed significant variations across the commodities:

Mangoes had the highest marketing cost at Rs. 4693 per quintal, accompanied by a substantial marketing margin of Rs. 8307 per quintal. The price spread for mangoes stood at Rs. 13000 per quintal, indicating a considerable gap between the marketing cost and the final selling price. The marketing efficiency for mangoes was 1.07, reflecting a slightly advantageous position for producers.

Oranges, on the other hand, exhibited a lower marketing cost of Rs. 1712 per quintal, with a corresponding marketing margin of Rs. 2088 per quintal. The price spread for oranges was Rs. 3800 per quintal, showcasing a moderate gap between the marketing cost and final selling price. The marketing efficiency for oranges was 0.58, suggesting room for improvement in the marketing process.

Potatoes showed a marketing cost of Rs. 589 per quintal, with a marketing margin of Rs. 891 per quintal. The price spread for potatoes was Rs. 1480 per quintal, indicating a substantial difference between the marketing cost and final selling price. The marketing efficiency for potatoes was 0.69, highlighting some inefficiencies in the marketing chain.

Table 4. Marketing cost incurred by various stakeholder for selected commodities

	Particulars	Commodities			
		Mango	Orange	Potato	Onion
Cost incurred by Farmer	Shorting/Grading	200	150		
	Packaging	700	56	100	100
	Loading/Unloading	30	50		
	Transportation	1200	300		
	Total	2130	556	100	100
Cost incurred by Wholesaler/commission agents	Shorting/Grading		400	10	10
	Packaging				
	Loading/Unloading	150	166	34	34
	Transportation			300	200
	Weighing		20	10	10
	Wastage	333	50		
	Total	483	636	354	254
Cost incurred by Retailer	Packaging	500			
	Loading/Unloading	300	200	20	20
	Transportation	600	200	100	100
	Market fee	180	40	15	17
	Wastage	500	80		
	Commission	1820	464	88	96
	Total	3900	984	223	233

Table 5. Price distribution and margins in the supply chain for mangoes, oranges, potatoes, and onions

Particulars	Commodities			
	Mango	Orange	Potato	Onion
Net Price received by the farmers	14000	2200	1020	1250
Cost incurred by the Farmer	2130	556	100	100
Farmers sale price	16130	2756	1120	1350
Cost incurred by wholesaler cum commission agents	483	636	354	254
Marketing Margin of the wholesaler cum commission agents	1820	464	88	96
Wholesaler cum commission agents' sale price	18433	3856	1562	1700
Cost incurred by Retailer	2080	520	135	137
Marketing margin of retailer	6487	1624	803	1163
Retailer sales price	27000	6000	2500	3000
Price paid by Consumer	27000	6000	2500	3000

Table 6. Price spread and marketing efficiency of selected fruits and vegetables

Particulars	Commodities			
	Mango	Orange	Potato	Onion
Marketing cost (C)	4693	1712	589	491
Marketing Margin (A_{mi})	8307	2088	891	1259
Prices Spread (PS)	13000	3800	1480	1750
Marketing Efficiency	1.07	0.58	0.69	0.71

Finally, onions had a marketing cost of Rs. 491 per quintal, with a marketing margin of Rs. 1259 per quintal. The price spread for onions stood at Rs. 1750 per quintal, indicating a notable gap between the marketing cost and final selling price. The marketing efficiency for onions was 0.71, suggesting room for improvement in efficiency. Overall, the analysis underscores the importance of understanding and optimizing the marketing process for each commodity to enhance profitability and efficiency.

4.3 Factors Influencing the Prices of Fruits and Vegetables

In the research on factors influencing the prices of fruits and vegetables, stakeholders' perspectives were examined, including farmers, wholesalers/commission agents, and retailers. The analysis revealed notable differences in the perceived importance of various factors. Among farmers, the variety of produce emerged as the most influential factor, with a mean score of 4.77, ranking first. Market competition also held considerable weight for farmers. Nation demand and Market competition also played a significant role, with the mean score of 4.5 and 4.37 respectively.

Market competition emerged as the most significant factor for wholesalers and commission agents, with a high mean score of 4.73, ranking first. Local supply was also notable, with a mean score of 4.67, ranking second. Among retailer, Local demand was the most critical factor, with a mean score of 4.67, ranking first. Market competition remained significant for retailers as well, with a mean score of 4.40, ranking second.

Weather conditions and crop diseases/pests were generally considered less influential factors across all stakeholder groups, ranking lower in mean scores. Similarly, factors like international demand and cold storage facilities had relatively low mean scores and ranks, indicating lesser significance in determining prices.

The study highlights how crucial it is to grasp what farmers, wholesalers, and retailers think about fruit and vegetable prices. It shows that everyone is thinking a lot about the the market competition (Number of buyer and number of seller). Whether you're a farmer or a retailer, understanding how competitive the market is really matters. This tells us that knowing what everyone involved thinks is super important for figuring out how prices work.

Table 7. Factors influencing the prices of fruits and vegetables

Factors	Farmers		Wholesalers/commission agents		Retailers	
	Mean	Rank	Mean	Rank	Mean	Rank
Seasonality	4.27	4	4.00	4	4.07	3
Weather conditions	3.60	8	2.33	9	1.60	11
Crop diseases and pests	3.00	9	1.93	10	1.33	13
Variety/Type	4.77	1	3.73	6	2.97	8
Transportation costs	1.43	13	1.27	15	2.93	9
Local Demand	3.80	7	4.13	3	4.67	1
National Demand	4.50	2	3.87	5	3.87	4
International Demand	1.47	12	2.47	8	1.40	12
Local Supply	4.10	6	4.67	2	3.80	5
National Supply	4.23	5	3.33	7	3.00	7
International Supply	1.03	16	1.80	13	1.13	15
Market competition	4.37	3	4.73	1	4.40	2
Market Yard Facilities	1.40	14	1.40	14	1.63	10
Method of Sale	2.60	10	1.87	11	3.33	6
Government policies and regulations	1.17	15	1.13	16	1.27	14
Cold Storage facilities	1.60	11	1.83	12	1.03	16

5. CONCLUSION

The findings highlight the significant role of middlemen, such as pre-harvest contractors and commission agents, in the supply chain, which can lead to increased costs and reduced profits for farmers. The sales method was used by farmers and commission agents affected the final pricing for consumers, and in the vashi market most of the wholesaler are used hatta method for the sales which is not transparency on price. The study also reveals notable variations in marketing costs, margins, and price spreads across different commodities, with mangoes having the highest marketing margin, and oranges having the highest price spread. Potatoes and onions have relatively lower marketing costs and highest retailers margins, highlighting the need to address the complex supply chain and marketing practices to improve farmers' profits. The study identified market competition as a dominant factor influencing fruit and vegetable prices in the Vashi APMC market, across all stakeholder groups. Variety/type and national demand were significant factors for farmers, while local supply and demand were crucial for wholesalers/commission agents and retailers, respectively. This present study suggest to promote and strengthen online platforms like e-NAM to empower farmers to market directly to wholesalers and retailers, improving their market access and livelihoods. An awareness campaign can be launched to educate farmers about direct sales and online platforms, in collaboration with local agricultural extension offices, NGOs, and farmer organizations. Open auctions and simple transactions can be promoted to ensure fair pricing, reducing paperwork and intermediaries, and encouraging digital payments.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gondaliya VK, Bansal R, Jadav KS, Shaikh AS. Export of fruits and vegetables from India: Growth, opportunities and challenges. Anand Agricultural University, Anand (Gujarat); 2017.
Available:https://www.aau.in/sites/default/files/book2.pdf
2. Agricultural and Processed Food Products Export Development Authority (APEDA). Fresh Fruits & Vegetables.

Available:https://apeda.gov.in/apedawebsite/six_head_product/FFV.htm
3. Anonymous, (2022-23). Department of Agriculture and Farmers Welfare; 2023. Available:https://agriwelfare.gov.in/en/StatHortEst
4. Bijapur DM, Mulimani A. Agricultural marketing and rural development, India; 2023.
5. Kohls RL, Uhl JN. Marketing of agricultural products, 6th edition, New York, Macmillan Publishing Company. 1990;18–21.
6. Acharya SS, Agarwal NL. Agricultural marketing in India. Edition 7, CBS publishers & distributors Pvt Ltd, New Delhi, 2021;281-300.
7. Kumari S, Dwivedi S, Puria P. Regulated agricultural market. Recent trends in agricultural economics and agricultural extension. 2023;64-71.
8. Panda R, Sreekumar. Marketing channel choice and marketing efficiency assessment in agribusiness. Journal of International Food & Agribusiness Marketing. 2012;24:213-230.
9. Kaul GL. Horticulture in India: Production, Marketing and Processing; Indian Journal of Agricultural Economics. 1997; 52(3).
10. Ashturker BM, Deole CD. Producers' Share in Consumers Rupee: A case study of fruit marketing in Marathwada. Indian Journal of Agricultural Economics. 1985;40(3).
11. Anonymous. Maharashtra state agricultural marketing board; 2024. Available:https://www.msamb.com/ApmcDetail/APMCPriceInformation
12. Mumbai Agricultural Produce Market Committee, Mumbai; 2023. Available:https://www.mumbaiapmc.org/
13. Anonymous; 2022-23. Available:https://agmarknet.gov.in/PriceAndArrivals/arrivals1.aspx
14. Tiwari M, Ramchandra. Price spread and marketing efficiency of soybean marketing channels in district Sagar, Madhya Pradesh. The Pharma Innovation Journal. 2022;11(5):1542-1545.
15. Kalita B. Marketing efficiency, price spread, share of farmers in case of horticultural markets of Assam. International Journal of Advance Research and Development. 2017;02(08): 65-72.
16. Lokhande N, Zechariah J. Marketing pattern of major pulses in the study area. Trends in Biosciences. 2018;11(20):2955-2958.
17. Acharya SS, Agarwal NL. Agricultural marketing in India, Oxford and IBH Publishing Co., New Delhi. 2007;385-417.
18. Vasoya RR, Vahoniya DR, Rajwadi A. Farmers' purchasing behaviour of insecticides in cumin (*Cuminum cyminum*) and problems faced by farmers for cumin in Dhrol Taluka of Jamnagar District, Gujarat, India. Asian Journal of Agricultural Extension, Economics & Sociology. 2023; 41(9):462–474.
19. Gandhi VP, Namboodiri NV. Marketing of fruits and vegetables in India: A study covering the Ahmedabad, Chennai and Kolkata Markets. Indian Institute of Management Ahmedabad, Research and Publication Department, IIMA Working Papers; 2004.
20. Gandhi VP, Namboodiri NV. Fruit and vegetable marketing and its efficiency in India: A study of wholesale markets in the Ahmedabad Area. Indian Institute of Management Ahmedabad, Research and Publication Department, IIMA Working Papers; 2002. Available:https://www.iima.ac.in/publication/
21. Paul S. Regulated Markets. Slide Share. Accessed on:(2017, October 20). Available:https://www.slideshare.net/drsauravpaul/apmc-vashi-81006279
22. Mehta A. APMC. SCRIBD. Accessed on:(2013, October 30). Available:https://www.scribd.com/presentation/180160611/APMC-ppt

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/120368