



# Fruits and Vegetables Unorganized Market in Indore District

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**Abstract** - It's interesting to hear about the changes in the vegetables and fruits market in Indore. It seems that there's been a noticeable increase in demand recently. With a population of around 4-5 million in Indore, and considering that about 90% of people consume vegetables daily, it's crucial to ensure a diverse and abundant supply to meet this demand. The fact that only 4-5 varieties of vegetables are mainly available in the market suggests that there may be opportunities for diversification and expansion. Introducing a wider range of vegetables could not only cater to varied consumer preferences but also contribute to the nutritional diversity of the population. To capitalize on the rising demand, local farmers and suppliers could explore growing and supplying additional varieties of vegetables that are popular in other regions or have specific health benefits. Additionally, efforts could be made to promote sustainable farming practices and support local farmers to enhance both the quality and quantity of produce available in the market. Furthermore, initiatives to educate consumers about the benefits of consuming a variety of fruits and vegetables could help drive demand even further. This could include nutrition education programs, cooking demonstrations showcasing different vegetable dishes, and promotional campaigns highlighting the importance of a balanced diet. Overall, by responding to changing consumer preferences and actively diversifying the offerings in the vegetables and fruits market, Indore can not only meet the current demand but also foster a healthier and more vibrant food ecosystem for its residents.

## I. INTRODUCTION

In Indore market is very rich and popular for fruit and vegetable market. We have seen its rapid changes concerning time and move towards a new level every time. In the last decade, people have become very conscious about their health and adopted fruit daily. We can see that about 100+ varieties of fruits and 100+ varieties of vegetables are available in India but we can see that in the local market of Indore, only 10-15 varieties of fruit and vegetable are available. Some other problems are also faced by many indorians as like different rates by different vendors so "one price one vegetable is not available". Every day about 4-5 members in families spend approx 100 rupees daily on vegetables so the vegetable market is very vast as compared to other markets. Arthanari, Anuradha[1] classify the vegetable buyer data based on different classifications such as age group, marketplace, buyer education level, buyer income, buyer family size. In Indore Choithram mandi is famous for its vegetables and fruit market, so many villagers sell their vegetables and fruit in Choithram mandi vendors and farmers do not get good money exchange for their fruit and vegetables.

In below table we shown the different vegetables and their market trend in Indore.

S.no	Vegetable name	Famous in indore	Market cap in Global
1.	Amaranth	NO	\$5.89 billion
2.	Ridged Gourd	YES	\$1.13 billion
3.	Apple Gourd	YES	\$4.13 billion

4.	Arrowroot	NO	\$2.19 billion
5.	Artichoke	NO	\$2.77 billion
6.	Ash Gourd	NO	\$500 million
7.	Aubergine	YES	\$2.33 billion
9.	Bamboo shoots	NO	\$375 million
10.	Beetroot	YES	\$450 million
11.	Bell Pepper	YES	\$4.29 billion
12.	Bitter Gourd	YES	\$1 billion
13.	Black Pepper	YES	\$4.3 billion
14.	Bottle Gourd	YES	\$1.53 billion
15.	Spinach	YES	\$2.53 billion
16.	Broccoli	NO	\$1.07 billion
17.	Cabbage	YES	\$47 billion
18.	Capsicum	YES	\$4.47 billion
19.	Carrot	YES	\$50 million
20.	Cauliflower	YES	\$15 billion
21.	Celery	NO	\$25 million
22.	Chickpeas	YES	\$14.91 billion
23.	Chilli	YES	\$100 million
24.	Cluster Beans	YES	\$2.91 billion
25.	Colocasia Root	NO	\$500 million
26.	Coriander Leaf	YES	\$4.51 billion
27.	Corn	YES	\$297 billion
28.	Cucumber	YES	\$1.25 billion
29.	Cucumis Utilissimus	YES	\$1.50 billion
30.	Curry Leaf	YES	\$5.5 billion
31.	Drumstick	YES	\$1.1 billion
32.	Red Chilli	YES	\$1 billion
33.	Elephant foot yam	YES	\$400 million
34.	Fava Beans	NO	\$3.29 billion
35.	Fennel	NO	\$768 million
36.	Fenugreek Leaf	YES	\$2,14 billion
37.	Garlic	YES	\$21.59 billion
38.	Ginger	YES	\$4.5 billion
39.	Green Beans	YES	\$4.1 billion
40.	Green Chilli	YES	\$596 million
41.	Indian Gooseberry	YES	\$2.14 billion
42.	Jackfruit	YES	\$327 million
43.	Kidney beans	YES	\$428 million
44.	Kohlrabi	NO	\$600 million
45.	Lady Finger	YES	\$4 billion
46.	Maize	YES	\$143 billion
47.	Mouse Melon	NO	\$17 billion
48.	Mushroom	YES	\$50 billion
49.	Mustard Greens	NO	\$5,71 billion
50.	Natal Plum	NO	\$400 million
51.	Zucchini	NO	\$3.6 billion
52.	Onion	YES	\$7.45 billion
53.	Peas	YES	\$3.6 billion
54.	Peppermint	YES	\$180 million
55.	Pointed Gourd	NO	\$200 million
56.	Potato	YES	\$9 billion

57.	Pumpkin	YES	\$1.11 billion
58.	Raddish	YES	\$1.4 billion
59.	Raw Banana	YES	\$126 million
60.	Raw Banana Flower	NO	\$29 million
61.	Tomato	YES	\$181 billion
62.	Turmeric	YES	\$1.1 billion
63.	Turnip	YES	\$50 million
64.	White Goose Foot	NO	\$500 million

Table 1 - Vegetable Segment in Indore

In below table we shown the different Fruit and their market trend in Indore.

S.no	Fruit name	Famous in indore	Market cap in Global
1.	Mango	YES	\$67.95 billion
2.	Apple	YES	\$100.75 billion
3.	Blackberry	NO	\$1.41 billion
4.	Orange	YES	\$3.84 billion
5.	Jackfruit	YES	\$327 million
6.	Banana	YES	\$140 billion
7.	Red Banana	NO	\$126 million
8.	Cranberry	NO	\$98 million
9.	Fig	NO	\$1.35 billion
10.	Grapes	YES	\$215 billion
11.	Gooseberry	NO	\$1.68 billion
12.	Pineapple	YES	\$28 billion
13.	Lychee	YES	\$12 billion
14.	Coconut	YES	\$18 billion
15.	Pear	YES	\$7.88 billion
16.	Grapefruit	NO	\$9.97 billion
17.	Watermelon	YES	\$3 billion
18.	Water Chestnut	NO	\$2.98 billion
19.	Apricot	NO	\$900 million
20.	Avocado	NO	\$16 billion
21.	Blueberry	NO	\$2.8 billion
22.	Dragon Fruit	NO	\$526 million
23.	Pomegranate	YES	\$236 million
24.	Black Current	NO	\$1.56 billion
25.	Red Current	NO	\$74.7 million
26.	Kiwi	YES	\$1.89 billion
27.	Wood apple	NO	\$200 million
28.	Acai berry	YEP	\$1.68 billion
29.	Cashew apple	NO	\$7.65 billion
30.	Palm fruit	NO	\$68.33 billion
31.	Persimmon	NO	\$899 million
32.	Malay Apple	NO	\$80 million
33.	Barberry	NO	\$4 billion
34.	Date fruit	YES	\$29.48 billion
35.	Lychee	YES	\$11.48 billion
36.	Sugar Cane	YES	\$945 million
37.	Red Banana	YES	\$126 million
38.	Kamquat	NO	\$720 million

39.	Macadamia nut	NO	\$1.45 billion
40.	Malta fruit	NO	\$63 million
41.	Mimusoaps	NO	\$80 million
42.	Monk fruit	NO	\$593 million
43.	Elder Berry	NO	\$461 million
44.	Cloud Berry	NO	\$278 million
45.	Maqui berry	NO	\$21 billion
46.	Damson	NO	\$100 million
47.	Goji Berry	NO	\$274 million
48.	Feijoa	NO	\$1 billion
49.	Kiwano	NO	\$200 million
50.	Mandarine	YES	\$390 million

Table 2 - Fruit Segment in Indore

## II. LITERATURE SURVEY:

In the last few years many research about the consumers behaviour [2] K.b Ramappa and A.V Manjunatha shows their research on the consumer behaviour on the fruit and vegetable market. [3] [4] In this research also study about the consumer behaviour related to organized market of vegetables and fruits. Last few years vegetables and fruit market is topic about the consumer behaviour affect the sales of market and demand of market.

Different cities study shows about the market of fruit and vegetables in different district [6][10] As mysore district that research paper tell about the high demand of fruits and vegetables in mysore district and its categorized the different aspect of demand of age, income and other. Ramchandra, rani and meena tell about the market of banglore its detailed view of the customer behaviour in banglore . They classify the retail behaviour of banglore city and also detailed view result were introduced.

## III. PROPOSED METHODOLOGY:-

As discussed earlier, the Fruit and Vegetable market size is very big as compared to other markets. But still vegetable and fruit market is unorganized as compared to other markets such as the IT market is an organized market. So we have discussed some methodologies to help the Indore vegetable and fruit market as well as the Indian fruit market. In Indore about a thousand ventures sell vegetables and fruits on road streets and market big players such as BigBasket,blinkit and Jiomart retailer sell vegetables and fruits in their stores and online but consumers face some issues with online fruits concerning their freshness, So trust in online market concerning vegetable and fruit is very difficult for consumer so we proposed some model that help to modernized online way to sell fruits and vegetables its also help to offline consumers and street vendors.

We Used a chain pattern between consumers and vendors help to find which vegetables and fruits have higher demand in which area, we can use the techniques of machine learning to detect the last few years of data so it can help to find the pattern of buying of consumers, In last few research about consumers behaviour [2][3][4] we can fetch some data on other research done by the researcher.

In the area of fruit and vegetables offline market is big so we connect street vendors to the consumer directly and also help the street vendor to connect with the farmer, It can help to reduce the transportation cost And also reduce the vegetable and fruit cost.

**So we proposed two delivery techniques for street vendor to customer and farmer to street vendor :-**

**Street vendor to customer fruits and vegetables selling Methodology:**

First of all street vendors are connected to one single application that helps customers book street vendors in their location after a street vendor comes into the customer's location and the customer buys vegetables with different varieties available in the street vendor cart the customer also selects vegetable on the home location they don't need to compromise in online fruit and vegetables bad qualities issue arises sometimes in the online order.

This process works like any other food delivery app works, The customer books vegetables the vendor gets a message to the customer and after vendor goes to the customer's home and after that customer buys the vegetables.

**Farmers to street vendors selling methodology :**

We can introduced the transportation services that connected farmer to street vendor and street vendor directly buy vegetables with the farmer. Transportation services reduced the unnecessary cost of source to destination places.

## IV. CONCLUSION:

In this paper, we discussed about Fruits and Vegetable unorganized market in indore and we give some insightful adviced to help market development and its increase indorian people to choose vegetable and fruits quantities.This paper also shown the market capitalization and market view of the fruits and vegetables .

## V. FUTURE WORK:

We will aim to improve the fruit and vegetable span life and also study every fruits characteristics and also motivated the local farmer to grow new varieties vegetables.

## REFERENCES

- [1] Arthanari, Anuradha. (2015). Analysis on the behavioral Pattern of Organized and Unorganized Vegetable Retail Shoppers. Bonfring International Journal of Industrial Engineering and Management Science. 5. 90. 10.9756/BIJEMS.8088
- [2] K. B. Ramappa, A. V. Manjunatha, ' Fruits and Vegetable Consumers' Behaviour towards Organised Retailers: Evidence from India', International Science Index Vol:2, No:6,2015
- [3] Sanjeev Kapoor & Niraj Kumar, Fruit, 'Vegetable Consumers' Behavior: Implications for Organized Retailers in Emerging Markets', Journal of International Food & Agri business Marketing, Volume 27, Issue 3, P 203-227,2015

- [4] Aparna and C.V. Hanumanthaiah, 'Organised Retailing of Vegetables: A Farmer, Retailer and Consumer Perspective in India', *American-Eurasian J. Agric. & Environ. Sci.*, Vol.13, No 9: P-1258-1265, 2013
- [5] Marieke Nijmeijer, Anthony Worsley, Brian Astill, "An exploration of the relationships between food lifestyle and vegetable consumption", *British Food Journal*, Vol. 106 Iss: 7, pp.520 – 533,2004
- [6] Fathima, Gowhar. (2024). Ethical issues in un-organized market for fruits and vegetables in Mysore district. *Journal of Management Research and Analysis*. 11. 54-58. 10.18231/j.jmra.2024.010.
- [7] Madanmohan P, Kumar G. Agri-food Supply Chain Management:Literature Review. *Intelligent Inf Manag*. 2017;9(2):68–96
- [8] Dastagiri M, Chand R, Kingsly I, Hanumanthaiah CV. IndianVegetables: Production trends, Marketing efficiency and export competitiveness. *Am J Agricul Forestry*. 2013;1(1):1–11
- [9] Samuel P, Venkatakumar, Manoj K. Analysis on agricultural sustainability in India". *Curr Sci*. 2017;112(2):1–9.
- [10] Ramachandra, Dr & Rani, Meena. (2011). Retailing of Fresh Fruits and Vegetables in Bangalore – A Study on Consumers' Experience in Modern vis-a-vis Traditional Retail Formats. *Indian Journal of Applied Research*. 3. 308-311. 10.15373/2249555X/APR2013/101.
- [11] Protasova, Lyudmila & Nabokov, Vladimir. (2023). State of production and qualities of fruits and vegetables. *Agrarian Bulletin of the*. 228. 70-79. 10.32417/1997-4868-2023-228-13-70-79.
- [12] Gousoddin, & Miyan, Javed & Kumar, Avanish. (2017). Supply Chain Management of Fruits: A Case Study on Marketing Channels of Mango in Bidar District, Karnataka. *IRA-International Journal of Management & Social Sciences (ISSN 2455-2267)*. 8. 135. 10.21013/jmss.v8.n2.p1.
- [13] M.B., Dastagiri & Chand, Ramesh & Kingsly, Immanuelraj & Hanumanthaiah, C. & Paramsivam, P. & Sidhu, R.s & Sudha, M. & Mandal, Subhasis & Singh, Basantha & Chand, Khem & Balasubramanian, Ganesh Kumar. (2013). *Indian Vegetables: Production Trends, Marketing Efficiency and Export Competitiveness*. 1. 1-11.
- [14] Balaji, Pu & Chandrasekaran, Karthikeyan & Vadivelu, Sakthirama. (2019). Retailers and Consumers Perspectives Towards Food Retail. *Madras Agricultural Journal*. 106. 10.29321/MAJ.2019.000235.
- [15] Kehoe SH, Dhurde V, Bhaise S, Kale R, Kumaran K, Gelli A, Rengalakshmi R, Sahariah SA, Potdar RD, Fall CHD. How Do Fruit and Vegetable Markets Operate in Rural India? A Qualitative Study of the Impact of Supply and Demand on Nutrition Security. *Food Nutr Bull*. 2019 Sep;40(3):369-382. doi: 10.1177/0379572119846809. Epub 2019 Jun 5. PMID: 31167553.

