

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 3; March 2026; Page No. 596-600

Received: 23-01-2026
Accepted: 26-02-2026

Indexed Journal
Peer Reviewed Journal

Understanding the market segments of consumers in relation to vegetable purchasing in selected parts of West Bengal

¹Madhurima Maiti, ²Shrabantika Ghosh and ³Debabrata Basu

¹Assistant Professor, Department of Agriculture Sciences, Techno India University, West Bengal, India

²Faculty Trainer, Syngenta Foundation India, Pune, Maharashtra, India

³Professor, Department of Agricultural Extension, Uttar Banga Krishi ViswaVidyalaya, Cooch Behar, West Bengal, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i3g.3430>

Corresponding Author: Madhurima Maiti

Abstract

This study evaluates different market segmentations of fresh vegetable customers in urban and rural area by identifying different clusters of consumers related to their buying behaviour. By selecting and interviewing 300 respondents, 150 rural from Kakharda gram panchayat and 150 urban from Maheshtala municipality, with structured interview schedule, data collection was done from march, 2022 to august, 2023. A number of variables such as age, income level, occupation, family size, vegetarian member, market distance, shop preference, quantity consumed per day, bargaining habit, quality preferences etc. were taken into consideration. For categorizing the consumers into meaningful groups, Cluster analysis in SPSS was applied thoroughly. Six different clusters were found in urban area depicting routine following regular buyers, price conscious companion preferring buyers, family dependent buyers, detailed information loving quality conscious buyers, experiment loving flexible buyers and price insensitive online shopping preferring buyers. Similarly in rural area five clusters were identified such as companion loving routine following regular shoppers, influence driven shoppers, kitchen garden loving quality conscious shoppers, flexible practical oriented shoppers and bargain driven shoppers. This result provides detailed understanding strategies for market interventions and policy making.

Keywords: Buying behaviour, cluster analysis, consumer segmentation, vegetable market

Introduction

The method of dividing a big consumer or commercial market into smaller consumer categories (referred to as segments) based on shared criteria is known as market segmentation. These segments often comprise both current and potential customers. Researchers often look for comparable traits, such as desires pursuits, lifestyles, or even same demographic profiles, when separating or segmenting markets. Finding high-yield segments—that is, those that are most likely to be beneficial or have room to grow—is the main goal of segmentation in order to identify these and give them additional attention, or to make them target markets. There are numerous approaches to market segmentation that have been found. Business-to-business (B2B) sellers may divide the market into various company categories or nations. In contrast, business-to consumer (B2C) companies may divide the market into significant categories such as lifestyle, behavioural, or demographic. Consumers of urban area and rural area were selected as study area to identify the market segments after a discussion with the vegetable retailers of the local market where the consumers used to buy. The retailers suggested that there are significant differences between the consumers of these two areas based on their lifestyles and demographic features.

So, the objective of this study was to identify the market

segments related to fresh vegetable purchasing in urban and rural areas.

Market segmentation helps to divide customers in similar groups with similar marketing attributes which minimizes variation between segments. Various marketing mixes divide the whole market into different buyer groups ^[1]. Behavioural segmentation focuses on customer actions such as, product use and purchasing patterns, often combined with psychographic, demographic and geographic bases. Effective segmentation requires advanced analytical methods and meaningful criteria. Production goals, crops and practices are closely related with segmentation of agricultural and food market ^[2]. According to the Studies from different countries reveal that price fluctuation, quality, safety measures, health concern and environmental factors are the variables that differentiate consumers ^[3]. There is a clear difference between urban and rural customers in respect of income, accessibility, purchasing pattern and Buying preferences. Customers groups with different attitudes and behaviours can be recognized through cluster analysis. Customers who prefer Organic and green markets are often influenced by ethics, income and accessibility. Urban customers are affected by food labels, social media platforms, accessibility etc. According to Tiwari and Sahu, for positioning, targeting and assessing buying behaviour of consumers, appropriate clustering of

them is very important ^[4].

Materials and Methods

From March 2022 to August 2023, the data collection was done through personal interview with a structured interview schedule. Maheshtala municipality as urban and Kakharda Gram Panchayat as rural areas were selected purposively. For these respective areas, village Seuri comprising 457 households and ward no. 14 comprising 1,238 households were chosen randomly. From both areas, 150 respondents each, were interviewed randomly. A pilot study was conducted to understand the differential characteristics of

the areas. The schedule was handed over to the respondents in the local language and their answers were recorded in English on the schedule.

Clustering is the method of grouping entity with similar characteristics into same group, while dissimilar in separate groups. So, a large dataset is divided into smaller meaningful sub-groups. The rural and urban households were categorised into distinct clusters based on vegetable purchasing behaviour according to various attributes such as family influence, market habits, frequency or mode of purchasing etc.

Table 1: List of Variables for Market segmentation

Sl. No.	Variables	Description	Measurement	Reference
1	Education	Primary/Secondary/ Higher secondary/Graduation/Post graduation	In terms of years in formal education	Scale Adapted from Trivedi (1963) ^[5] . with required modification ^[5] .
2	Age of the respondent	Whether the respondent is young (<35) or middle-aged (36-50) or old age (>50)	In numbers	
3	Family Income	In terms of rupee earned by family members monthly	Rs. /Month	
4	Occupation	Service/Business/Homemaker/Others	In numbers	Adapted from Mandal (2018) with required modification ^[6] .
5	How far is the vegetable market you often visit	>1km/1-3 km/ >3-5 km/ >5 km	In numbers	
6	Total Number of members in Family	No of family members in that household	In number	
7	Consumption habit in terms of frequency	Number of vegetable meals, Meal per Day	In numbers	Adapted from Finzer <i>et al.</i> (2013) ^[7] . with required modification
8	Consumption habit in terms of quantity	Approximate quantity of vegetables required in a day	Gram/day in a day	
9	Time of visiting vegetable market	6-9 am/9am-12pm/4-7pm/7-10pm	Instrument was developed	
10	Mode of transportation	Walking/Bicycle/Motorcycle/Personal car/Other public transportation	Instrument was developed	
11	Frequency of visits to the market for buying vegetables	Daily/ in every 2 days/ Twice a week/ weekly	Instrument was developed	
12	Home-stead Vegetable-garden	Yes/No	Instrument was developed	
13	Vegetarian day per week	How many days a weak vegetarian meal is taken forcibly	In numbers	

Table 2: List of measuring methods of Market segmentation of vegetables purchasing

Rural	Urban	Measurement of Variables	Reference
Vegetable Selection		Instrument was developed	Adapted from Basu (1993) ^[8] . with required modification ^[8]
Market choice		Instrument was developed	
Vegetable choosing criterion		Instrument was developed	
Retail shop preference		Instrument was developed	
Tendency to bring companion to the market		Instrument was developed	
Bargaining habit		Instrument was developed	
Cost Consciousness		Instrument was developed	
Credit orientation		Instrument was developed	
Pattern of purchase in terms of volume		Instrument was developed	
Pattern of purchase in terms of retail shop loyalty		Instrument was developed	
Preference to vegetable retail shop		Instrument was developed	
Pattern of purchase in terms of quality loyalty		Instrument was developed	
Consultancy		Instrument was developed	

Results and Discussion

Consumers were understood and distributed in different categories based on their age, education level, income level and occupation types in both regions which are depicted in different diagrams. From the collected data, different categories of these variables were computed and thus all the respondents fell into different categories which ultimately helped segmenting the respondents more accurately in different buying behavior.

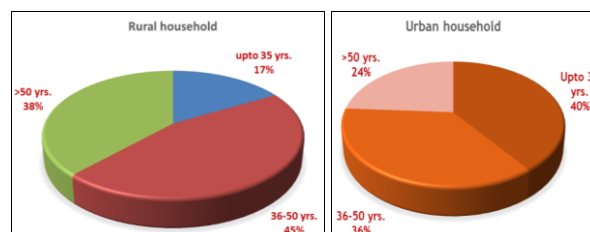


Fig 1: Distribution of the Consumers according to their Age group

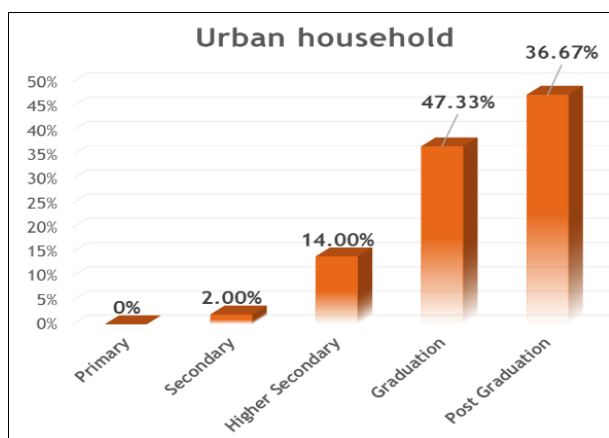
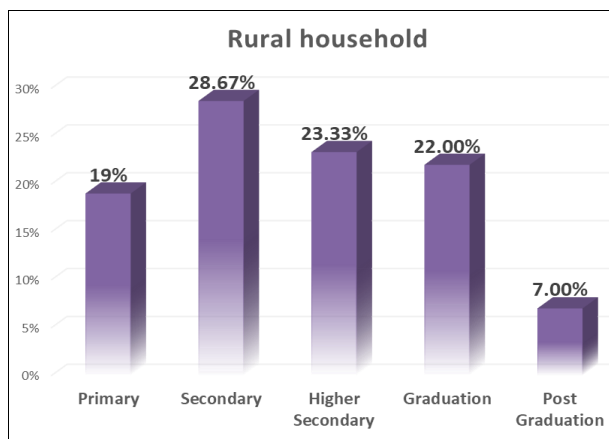


Fig 2: Distribution of the Consumers according to their Education

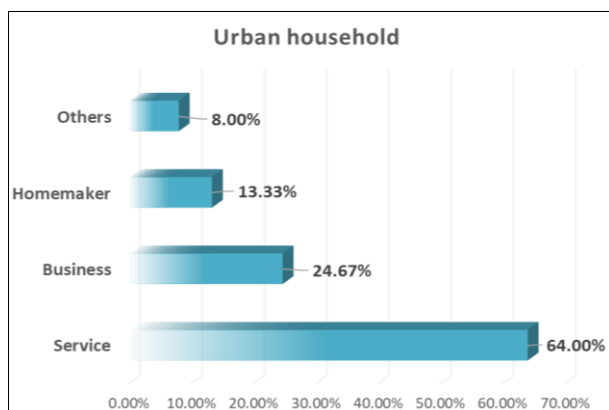
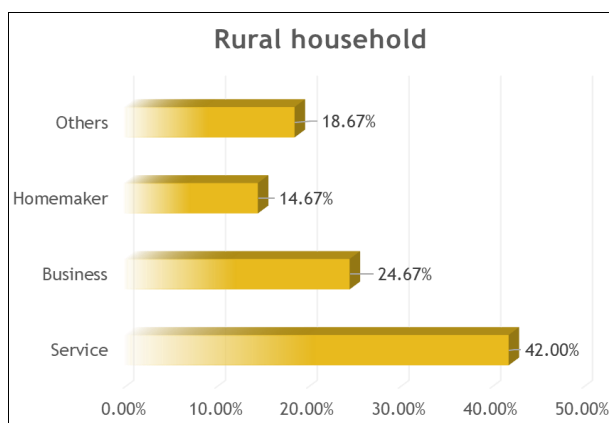


Fig 3: Distribution of the Consumers according to their Occupation

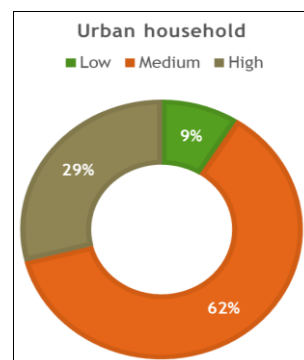
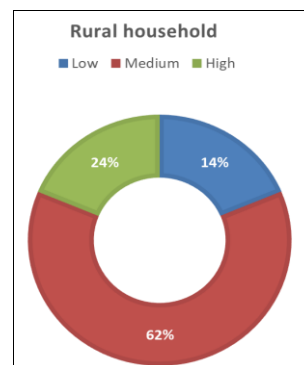


Fig 4: Distribution of the Consumers according to their Income level

Different clusters of respondents in rural area based on their behavioural attributes

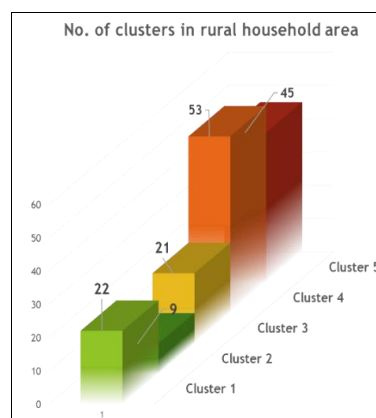


Fig 5: Different clusters of consumers in Urban area

Cluster 1: Companion & Routine Shoppers (22 Respondents)

These respondents normally go to market with family member or friend and buy vegetables as per the need. The quantity purchased depends on the number of family members and the number of vegetable dishes prepared daily. They prefer bargaining irrespective of the price and like to visit the same shop preferably which indicates strong price sensitivity.

This cluster reflects the regularity driven buyers who prefer shopping with companion. They are influenced by family need, shop loyalty and bargaining habit.

Cluster 2: Influence-Driven Buyers (9 Respondents)

This group purchase from the shops recommended by family, neighbours or friends. They tend to visit markets

depending on the distance and convenience which influence their purchasing frequency. They prefer recommendations for selecting vegetable shop, but also consider their independent choice time to time.

This small cluster reflects the socially influenced purchasing behaviour where opinion of friends, neighbour, family etc. matters. But they also consider their own choices for selecting vegetable shop.

Cluster 3: Quality-Conscious Buyers with Homestead Gardens (21 Respondents)

This group of consumer represents the quality conscious kitchen garden loving buyers who consider nutritional value as the main factor. They carefully buy vegetables considering their vegetarian family member's and overall requirement irrespective of the price for best quality. Buy mostly from local farmer's market for fresh vegetables. These depict the quality cautiousness as well as higher income and education level of them.

Cluster 4: Practical & Flexible Buyers (53 Respondents)

This cluster is more practical in the sense that they consider mode of transport, distance, and visit time and also their education, income level etc. in consideration first. So, they purchase from different sources of availability as per need, from rural haats to retail stores. They try to purchase the required amount for less wastage of time and money.

Cluster 5: Selective & Bargaining Shoppers (45 Respondents)

This group considers family's advice but also is influenced by attractiveness of vegetables. They like to compare between shops in the market for best quality and price. So, their buying decisions are based on selective careful variables. They mostly rely on the trusted vendor and bargain only when price seems unreasonable.

Different clusters of respondents in Urban area based on their behavioural attributes

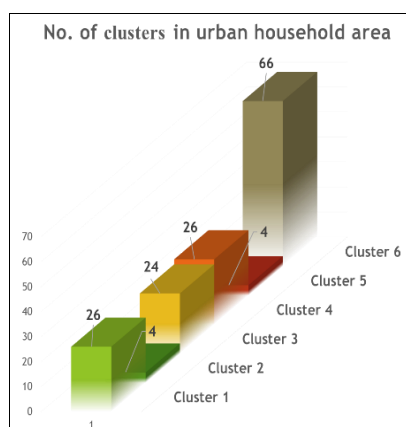


Fig 6: Different clusters of consumers in Urban area

Cluster 1: Price-Insensitive Buyers (26 Respondents)

This group considers authenticity and quality as the most important factor. They consider age, health before buying, are influenced by steady income, retailer's choice and even sometimes buy on credit if needed. So, some prefer online marketing from online apps so that they can buy using credit

cards time to time. This group represent middle to high income customers who even considering quality, do bargain when needed. Also show loyalty and trust to retailers.

Cluster 2: Experimental & Flexible Buyers (4 Respondents)

This cluster represent the flexible buyer group who tend to buy from anywhere trying different shops showing less loyalty for shops. They also depict a tendency to buy from online shopping of vegetable. They prefer convenience, shop alone and also show price sensitivity in their way.

Cluster 3: Family-Oriented Buyers (24 Respondents)

This group's buying habits are mostly influenced by elderly family member recommendation. They show mixed buying approach by preferring to visit farmer's haat as well as modern retail stores time to time. They stand for the traditional trusting buyers whose decisions are shaped by education and income level.

Cluster 4: Quality-Conscious, Information-Seeking Buyers (26 Respondents)

These consumers are well informed and careful group who consider several variables such as nutritional value, shelf life, quality of vegetable, reputation, knowledge and behavior of the retailer, before buying. Thus showing trust for traditional reputed local vendors who convey reliable information. Time of visiting the market is an important factor for them and they also buy on credit as per need.

Cluster 5: Price-Conscious, Companion Buyers (4 Respondents)

This group take buying decisions on the basis of affordability which makes them conscious about price. They visit the shops recommended by neighbours or trusted vendors and also prefer companion. They show loyalty towards same shop even with high price range. So they show price sensitivity at the same time sop loyalty.

Cluster 6: Routine, Regular Buyers (66 Respondents)

This group maintains a routine of visiting the same shop. Generally, they take decision about selecting the market and the shop based on distance, family size, need for quantity and quality. They are influenced by market and product appeal, retailer suggestions, but they also sometimes prefer homestead vegetable garden. They tend to bargain when price seems high.

Each and every cluster represents different factors that depict the purchasing habits like influence of price and quality, influence of family, retailer, habitual routines etc. which helps in forming market strategies and policies about urban vegetable market.

Similar study was conducted by Reddy *et al.* (2024) [9]. where cluster analysis was performed to identify different suitable genotypes of Fodder oat (*Avena Sativa* L.) in Kerala.⁹

Conclusion

Cluster analysis successfully identified distinct behavioural groups in both regions, highlighting differences in loyalty, credit orientation, companion influence, and purchasing flexibility. By distinguishing consumers in both areas in

terms of distinct behavioural pattern, deep understanding of the market type became possible which would definitely emphasise different market strategies for fresh vegetables. Different market interventions relating to area specific vegetables can be undertaken for targeted consumer segment based on demographic, behavioural, socioeconomic characteristics for better policy making, positioning and strengthening market efficiency.

References

1. Kovacic D, Radman M, Haas R. Segmentation of city market customers in Croatia: towards a marketing strategy for fruit and vegetable markets. *Bodenkultur Wien and Munchen*. 2002;53(4):207-216.
2. Finisterra do Paço AM, Raposo MLB. Green consumer market segmentation: empirical findings from Portugal. *International Journal of Consumer Studies*. 2010;34(4):429-436.
3. Macharia J, Collins R, Sun T. Value-based consumer segmentation: the key to sustainable agri-food chains. *British Food Journal*. 2013;115(9):1313-1328.
4. Tiwari M, Sahu RS. Social change, employment and development in weekly rural markets in Odisha. *South Asia Research*. 2024;44(1):7-23.
5. Trivedi G. Measurement and analysis of socio-economic status of rural families. Unpublished PhD thesis, Division of Agricultural Extension, IARI, New Delhi; 1963.
6. Mondal P. Consumers' decision-making process in purchasing cereals. Doctoral thesis, Bidhan Chandra Krishi Viswavidyalaya, West Bengal; 2018.
7. Finzer LE, Ajay VS, Ali MK, Shivashankar R, Goenka S, Sharma P, *et al*. Fruit and vegetable purchasing patterns and preferences in South Delhi. *Ecology of Food and Nutrition*. 2013;52(1):1-20.
8. Basu D. Farmers' decision-making process in purchasing pesticides. Doctoral thesis, Department of Agricultural Extension, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, West Bengal; 1993.
9. Reddy AS, Gayathri G, Reddy A. Cluster analysis in fodder oats (*Avena sativa* L.). *International Journal of Plant and Soil Science*. 2024;36(7):576-582. <https://doi.org/10.9734/ijpss/2024/v36i74768>