CUSTOMER SEGMENTATION IN SUPERMARKET USING CLUSTER ANALYSIS

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ABSTRACT

The research aims to understand the types of customer groups shopping in supermarkets, the segmentation of customers is based on the variables which impact the decision-making of their preference towards supermarkets. Cluster analysis is performed on a primary dataset collected in the form of a questionnaire. The questionnaire consists of the variables that can influence customers' preference towards supermarkets. In total 86 respondents did participate in data collection. The analysis of the data was piloted with hierarchal cluster analysis followed by K- Means cluster analysis. The finding of the analysis suggests that the customers can be segmented into 3 groups. The decisions related to offers, programs, priorities, promotion, place and other activities can be planned according to the target segment and market need.

Keywords: Cluster Analysis, Supermarket, Consumer preference.

INTRODUCTION

In India, a supermarket is known as a giant general store, and the majority of its customers belong to families of the middle class. Over the course of two decades, the supermarket has witnessed significant development. The number of supermarkets in the country has significantly increased. The development of the Internet offers multiple choices to retail industry customers. The internet has altered consumer preferences towards shopping. Consequently, it also altered the preference of shopping places. However, the growth of supermarkets has continued to increase all these years and has changed a lot with time. The

key contributing factors could be the country's urbanization, economy, and increased disposable income for a significant portion of the population.

The current research on customer groups of supermarkets will help to understand the different types of customer groups in the market who have different reasons to prefer/not prefer supermarkets.

LITERATURE REVIEW

The research by (Matsa, 2011), on the impact of the attributes such as competition and product quality on supermarkets. the author focuses on multiple attributes of supermarkets based in the US. The findings suggest that there exists a risk in customer loyalty when the store gives low priority to the quality of the products. Thus, quality is an attribute to focus on and adapt at regular intervals to retain customers. A similar kind of research by Muthuseshan (2018), on the attributes like the preferences and what perceptions does consumers have about D-Mart. This study focuses on attributes like consumer satisfaction, their preference, and the perception about D-Mart correlates with their purchases. The findings conclude that a large set of customers are satisfied with D-Mart.

On the other hand, Sami (2021) studied customer perception towards supermarkets in Goa. The study attempts to compare local retail stores and supermarket consumer profiles in the region using their demographic variables. The results of the study explain that perception plays a vital role in deciding the preference of purchasing place. Atulkar (2014), reviewed organised retail store's consumer preference towards shopping. The article is an attempt to understand consumer preferences and their purchase behaviour in stores. The results of the author explain that dimensions such as ambience, pricing, consumer involvement, and promotion impact their preference towards organised retail stores in various time periods.

METHODOLOGY

Data Collection

Primary data is collected by circulating an online questionnaire, exhibit 1 shows the questions in the questionnaire, the questions are designed to measure the impact of the variables on preference towards supermarkets. The variables are related to the 4Ps of the marketing mix. The responses are recorded on an interval scale of 5 points (1 is Strongly Disagree and 5 is Strongly Agree). Eighty-nine members participated in filling out the questionnaire, the demographics of the respondents are shown below.

Demography

The below tables exhibit the gender and age of the respondents.

Table 1: Gender		
Gender	**Count**	**Percentage**
Female	28	31.46
Male	61	68.54
Total	**89**	**100.00**

Table 2: Age		
Age	**Count**	**Percentage**
8 - 18	21	23.60
18 - 25	57	64.04
25 - 30	8	8.99
30 - 40	2	2.25
40 - 50	0	0.00
50 - 60	1	1.12
Total	**89**	**100.00**

For the analysis purpose, the opinion of those who had already visited the supermarket is considered. Out of eighty-nine responses, one respondent has never visited a supermarket, hence one response is eliminated from further process. The below table shows the preference for supermarkets among the respondents.

Table 3: Preference		
Preference of supermarket	**Count**	**Percentage**
Yes	79	89.77
No	9	10.23
Total	**88**	**100.00**

Results

Table 4: Finale Clusters Centre			
Attributes	**Cluster**		
	1	**2**	**3**
Pleasant	3	4	3
Exp_vary_supermarket	3	4	4
Price	3	5	4
Discount	3	5	4
Payment_method	3	4	3
Product_Availability	3	5	4
Self_selection_of_product	3	4	4
Comparing	2	5	4
Convinience	3	5	4
Missed_items	3	5	4
Product_promotion	3	4	3
Packaging	3	5	4
Product_Substitution	3	4	3
Accessability	2	4	3
Spacious	3	5	4
Product_recommendation	2	4	3
Shop_timings	3	4	4
Sample	3	4	3
Easy_return	3	4	3
Fixed_price	3	4	3
Quick_billing	3	4	3
Product_assortment	3	5	4

In the agglomeration schedule on performing hierarchical cluster analysis, the difference in the coefficients suggests considering 3 clusters for grouping the cases. Table 4 shows the results of the cluster centre.

Cluster one belongs to the group who do not prefer to shop in the supermarket, they don't agree that these attributes do not attract them towards supermarkets. Cluster two is the people who agree that these attributes impact their preference towards the supermarket and do prefer supermarkets for shopping. Cluster three people prefer supermarkets but do not agree that some of the attributes impact their preference decision.

Table 5: Number of Cases in each Cluster		
Cluster	1	14.0
	2	42.0
	3	32.0
Valid		88.0
Missing		.0

Findings and Discussion

Out of 88 respondents, 14 of them belong to cluster one who does not prefer to shop in supermarkets or do not agree that these attributes impact their preference decision. 42 respondents agree these attributes impact their preference and prefer to shop in supermarkets. 32 respondents prefer to shop in supermarkets, but some attributes do not impact their preference decision.

Cluster 1: They are the group who do not feel pleasant, find no difference among supermarkets, have no impact on price, prefer more convenience in shopping method, do not like recommendations from a salesperson, returning products is seen as neither easy nor difficult, the packaging is not problematic or attractive.

Cluster 2: Customers in this cluster find the store pleasant, which indicates a positive shopping environment for them, perceive the shopping experience as varies with different supermarkets, low price seekers, appreciate discounts and promotions, payment options, fixed price, quick billing and product availability are very satisfactory, likes comparing products to make choices, perceives convenient shopping experience in supermarkets, impulse buyers, satisfied with packaging, try new products in a category, like spacious and easy shopping, likes recommendations, not untimed purchasers, expects easy return policy.

Cluster 3: Customers in this cluster find the store moderately pleasant, perceive the shopping experience as varies with different supermarkets, moderate price and discounts seekers, agree with any payment options, product availability, spaciousness is satisfactory, likes self-selection of products, product comparers, convivence seekers and impulse purchases, does not like a product recommendation, expects good packaging, does not like to use substitute products, better accessibility is expected, wish more open shop timing, does not like returning, likes fixed prices, prefers faster billing, like existing product assortment.

CONCLUSION

The awareness about the existence of supermarkets over the last two decades has been increasing, and the preference to shop in supermarkets is also increasing. The advancement in technology and e-commerce enhanced the competition in the industry. The attributes which attracted and influenced the preference of consumers towards supermarket in two decades does not remain the same, the changes in consumer preference requires marketeers to study the segmentation of the market regularly. The research finds three clusters among the respondents, first cluster belongs to the group not preferring supermarket shopping, while the second cluster prefers supermarkets very much and the third cluster does prefer supermarket shopping but does not like promotions and inconveniences like moderate bill timings.

Upgrading the facilities and adjusting technology at regular intervals in the supermarket is required to cater for all segments of the market, these studies help the management of supermarkets to streamline the process and experience of shopping in supermarkets as per the market need contemporarily.

Exhibit 1: Questions
Have you ever visited a supermarket?
Gender
Age
How many different supermarkets have you visited?
How frequently do you visit a supermarket
I prefer to shop in supermarket
I prefer to shop at supermarket
I feel pleasant when I visit supermarkets
The experience of supermarket varies from one supermarket to another
I prefer shopping at supermarkets because of the pricing of the products
I prefer shopping at the supermarkets because of the discounts provided
I prefer shopping at the supermarkets because of additional offers i get with my payment methods
I prefer visiting at the supermarket because of availability of products i use
Selecting the products myself is one of the main reason for perfering supermarket
I prefer visiting at the supermarket because i am able to compare different products of same category
I feel convenient to shop supermarket
I can buy the items I forget to include on my list when I see them in the supermarket
I like to try new products/brand recommended by the store people
I prefer to buy products which are packed and stacked properly in supermarket
I prefer purchasing the products which are stacked rather than asking the store people for the products that are empty(only tag is present in the stack)
I prefer supermarket as it is easily accessible from my home/workplace
I prefer supermarket which are spacious and has lot of space to walk
I purchase the products recommended by sales people in supermarket

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