



FROM AWARENESS TO ACTION: THE POSITIVE IMPACT OF HEALTHCARE ADVERTISING

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Abstract: Advertisements play a crucial role in generating consumer demand for health care products. Every company wants to capture the market and shape consumers. All companies make significant efforts to create attractive advertisements. Organizations always want to create a positive impact in consumers' minds through advertisements. This study elucidates the positive influence it has on consumer buying behavior. We used descriptive research and convenience sampling for this study. 586 participants participated in this study. We collected data using a 5-point Likert scale. Hierarchical clustering and KMeans clustering were employed to analyse the data. This study demonstrated the positive influence of advertisements on consumers' purchasing behavior, particularly in relation to various age groups, genders, income levels, occupations, and educational backgrounds. Future managers can use this study to craft advertisements that positively attract customers and motivate them to purchase products

Index Terms - Healthcare product's advertisements, positive impact, purchasing behaviour

Introduction: Advertisements spread messages that impacted customers and inclined them towards products. Advertisements may be audio-visual, audio only, online, etc. Its main objective is to influence customers positively so that their purchasing behaviour can be hanged. Advertisements should be informational. It provides information about various features of the products. Advertisements are necessary for every product, including healthcare products. Healthcare products require more attention in this modern age. People are very eager to know about the benefits of using healthcare products.

Healthcare product advertisements are promotional content that emphasise features and characteristics of healthcare products that influence target customers. Healthcare product advertisements are customer-centric. Their basic objective is to make people aware of the products. It also targets healthcare providers and helps them to understand the mind of the consumers.

There are various formats of healthcare advertisements:

- Product advertisements: Promotes medicines, devices, and other healthcare products directly to patients, often including benefits and potential side effects.
- Public health campaigns are advertisements by governments or healthcare organisations that aim to promote public health behaviours, such as vaccination drives, free health check-ups, and free eye check-ups.
- Digital Healthcare Ads: Online advertisements through social media, Search engines, or healthcare apps, are useful for targeting customers and creating awareness. Moreover, healthcare product advertisements are expected to provide precise, correct, and evidence-based information that helps to reduce misconceptions.

Review of literature:

A review of literature is a synthesis of existing research on a specific topic to find out research gaps, trends, etc. It assists the researcher in choosing their topic and provides guidance on identifying research gaps and conducting analysis. It also helps to reduce research duplication. The following studies illustrate the current trends in research. It helps justify the relevance and significance of the research by drawing on established evidence and theories. It demonstrates the researcher's understanding of the field and commitment to informed, evidence-based inquiry.

Author	Title	Place	Objectives	Methods	Findings
Mrs. A. Sathyal, Dr. T. Mary Josephine Isabella2	Impact of Global Advertisement on perspective Consumer Buying Behaviour	Global	To identify the mixed effect of methods advertisement research on consumer approach perception.		This study shows changes in consumer perception about advertisement.
Atharva Jahagirdar, Heena Morankar	The Impact of Global Advertising on perspective Consumer Behaviour: A Study on Various Advertising Types and Effectiveness	Global	To identify the descriptive impact of statistics advertisements on consumer buying behaviour during the pandemic situation		This study established the impact of different types of advertisements on consumer buying behaviour.
Dr. Trupti Desai	To Study The Impact Of Social Media Marketing On Buying Behavior Of Customers - A Case Study Of Healthcare Products.	Global	To identify the impact of multiple social media on consumer behaviour.	Correlation, regression analysis, Structural Equation Modelling (SEM)	Social media has an immense impact on the purchasing of health care products. It provides information and helps providers and customers to make decisions.
Ummay Khanam Salma	Influence of Global Advertisements on perspective Consumer Behavior: A Study of Graduate and Postgraduate Students	Global	Identify preferences toward media selection.	Kruskal-Wallis (K-W) test	Advertising has a statistically significant impact on consumer behavior.
ADITYA YADAV	Impact Advertising on Consumer Behaviour	Delhi	The main objective of research this study is to analyze the positive and negative impacts of advertisements on consumer	Quantitative research	Advertisements have a significant impact on consumer buying behaviour.

			buying behavior.		
Bowen Fan	Research on the Impact of Advertisement on Consumer Behavior	Global perspective	Measure the impact of advertisements on consumers' behavior.	Kruskal-Wallis (K-W), Exploratory Factor Analysis (EFA), and Cronbach Alpha	The study identifies newspapers, the internet, and television as the main sources of advertisements that have an impact on consumers' purchasing behavior.
Dr. Sweety Regina Mary S, Dr. Jansi Rani	Impact Advertising On Consumer Buying Behaviour During Pandemic Period	Of Global perspective	To identify the percentage impact of method and social media on consumer buying behaviour.	chi-square test	This study indicates that television is one of the most influential media that affect consumer buying behaviour.
Dr. A. LAKSHMANA N S. AMUTHA	Impact of advertisements marketing and purchase behavior of health drinks in Tiruppur district	Tiruppur district	The aim is to study various advertisements for health drinks, their impact on consumer behaviour, and analyse the impact of social media marketing.	Descriptive statistics	Marketing is helpful for identifying consumer perceptions.
Dr. K. Nirmala, Ms. Suganthi Pais,	Advertiements And Its Impact On Consumer Buying Behaviour On Healthcare Products In Bangalore City	Bangalore City	The aim is to classify various healthcare products advertised on television and buying habits of customers.	Simple percentage method, chi-square analysis, weighted average shape method and Correlation method	Advertisements have a positive and negative impact on consumer buying behavior, and most of the time, customers mislead them.
R. Sunderaraj	IMPACT OF ADVERTISEMENT ON BUYING BEHAVIOUR OF CONSUMERS IN SIVAKASI	SIVAKASI	We aim to investigate the demographic makeup of consumers and the influence of advertisements on their buying habits.	• Chi-Square test • Weighted Arithmetic Mean	It was observed that there is no correlation between the respondents' age and the degree of impact of the advertisement. Additionally, there is no association between income levels and satisfaction with the

					advertised during use.	product
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Research Gap:

There are many studies on advertising and its positive impact on consumer buying habits. However, there are very few studies indicating the positive impact of advertisements on consumer buying behavior. This study evaluates the positive impact of advertisements on consumers of different demographic statuses.

Objectives:

- To identify the positive impact of advertisements on different demographic groups.
- To identify different clusters that are affected by the positive impact of advertisements.

Research Methodology

Two types of data were collected: **primary data** and **secondary data**.

- **Primary data** were collected through well-structured questionnaires and personal interviews.
- **Secondary data** is information gathered from journals, research papers, etc.

Questionnaire Design

- Questions were prepared using a Likert scale and closed-ended options.

Sampling Procedure

convenience sampling was employed to gather data. It is a non-probabilistic method; participation was based on people's willingness, availability, and accessibility. In this study, we gathered samples by considering the age, gender, educational background, occupation, and income of the respondents.

Research methodology:

- This study used SPSS for both cluster analysis and descriptive analysis.
- First, a hierarchical cluster analysis was done, and it was validated with K-means cluster analysis. Hierarchical cluster analysis is a statistical technique to identify clusters with the same characteristics. It is a process to identify a homogeneous group based on some common features.
- To validate this method, another statistical method, K-Means, was employed. It is a method of grouping data with the same features.
- Descriptive analysis was done to analyse demographic patterns.

Analysis and discussion:

Descriptive analysis:

It shows statistics for different demographic areas, like gender, age, monthly income, education, and occupation.

Table 1:

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	230	39.2	39.2	39.2
	female	353	60.2	60.2	99.5
	3	1	.2	.2	99.7
	4	2	.3	.3	100.0
	Total	586	100.0	100.0	

Maximum respondents are females. So we can conclude females are more aware of advertisements.

Table 2:

Age		Frequency	Percent	Cumulative	
				Valid Percent	Percent
Valid	18-27	421	71.8	71.8	71.8
	28-37	82	14.0	14.0	85.8
	38-47	29	4.9	4.9	90.8
	48-57	20	3.4	3.4	94.2
	58-67 and above	34	5.8	5.8	100.0
	Total	586	100.0	100.0	

The maximum age range of respondents is 18-27, suggesting that advertisements are more appealing to millennials.

Table 3:

Educational Background		Frequency	Percent	Cumulative	
				Valid Percent	Percent
Valid	HS	184	31.4	31.4	31.4
	Graduate	244	41.6	41.6	73.0
	Postgraduate	156	26.6	26.6	99.7
	others	2	.3	.3	100.0
	Total	586	100.0	100.0	

Most of the respondents are graduates (41.6%).

Table 4:

monthly Income		Frequency	Percent	Cumulative	
				Valid Percent	Percent
Valid	Less than 10000	201	34.3	34.3	34.3
	10001-20000	121	20.6	20.6	54.9
	20001-30000	80	13.7	13.7	68.6
	30001-40000	68	11.6	11.6	80.2
	40001 and above	116	19.8	19.8	100.0
	Total	586	100.0	100.0	

Maximum participant's monthly income was less than rs. 10000.so it is implied that income may be less but still customers are interested in health care products.

Table 5:

Occupation		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	70	11.9	11.9	11.9
	Business	213	36.3	36.3	48.3
	Public service	116	19.8	19.8	68.1
	Private Service	148	25.3	25.3	93.3
	Housewife	29	4.9	4.9	98.3
	Retired	10	1.7	1.7	100.0
	Total	586	100.0	100.0	

Maximum respondents are in business. Retired people do not have much interest in advertisements.

Table 6:

monthly expenditure on healthcare products		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than Rs.500	224	38.2	38.2	38.2
	Rs.501-1000	163	27.8	27.8	66.0
	Rs.1001-1500	98	16.7	16.7	82.8
	Rs.1501-2000	41	7.0	7.0	89.8
	More than 2000	60	10.2	10.2	100.0
	Total	586	100.0	100.0	

Maximum people spend less than Rs. 500 for purchasing healthcare products.

Table 7:

Have you been influenced by healthcare advertisements		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	331	56.5	56.5	56.5
	no	252	43.0	43.0	99.5
	3	3	.5	.5	100.0
	Total	586	100.0	100.0	

56.5% of respondents were influenced by healthcare advertisements. So advertisements have a good impact on consumer purchasing behaviour.

Table 8

What kind of media do you follow to view advertisements				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	TV	92	15.7	15.7
	Radio	19	3.2	18.9
	Internet	408	69.6	88.6
	Print media	23	3.9	92.5
	None of the above	44	7.5	100.0
	Total	586	100.0	100.0

69.6% of people were watching advertisements on the internet.

Table 9:

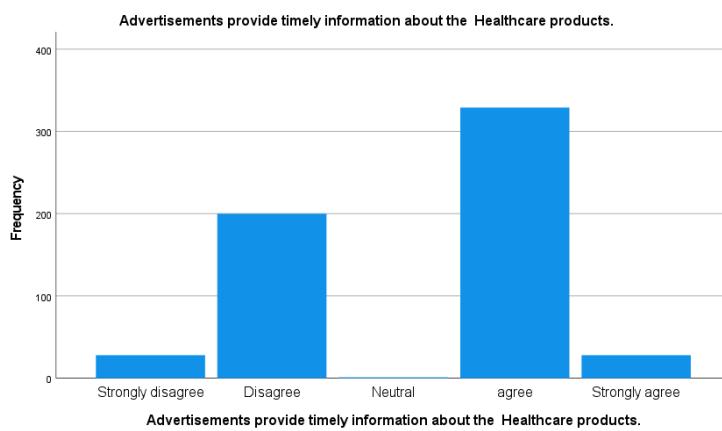
What is your frequency of watching advertisements				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5 times	312	53.2	53.2
	10 times	96	16.4	69.6
	15 times	16	2.7	72.4
	20 times	36	6.1	78.5
	none of the above	126	21.5	100.0
	Total	586	100.0	100.0

The majority of respondents watched advertisements no more than five times. It indicates that advertisements are sometimes boring.

Descriptive analysis of the survey instruments:

Table 10: Instrument 1

Advertisements provide timely information about the Healthcare products.				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	28	4.8	4.8
	Disagree	200	34.1	34.1
	Neutral	1	.2	.2
	agree	329	56.1	56.1
	Strongly agree	28	4.8	4.8
	Total	586	100.0	100.0

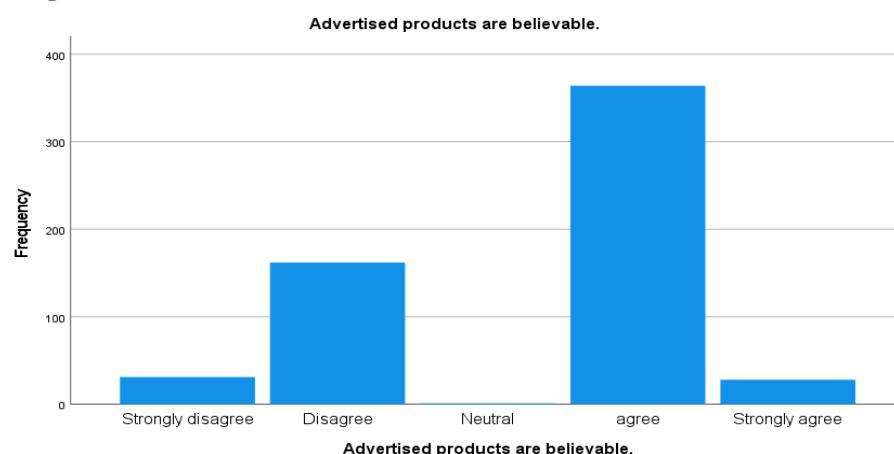
Image 1:

The above mentioned table and bar diagram indicate maximum respondents agreed to the statement, “Advertisements provide timely information about the healthcare products.”.

Table 11: Instrument 2

Advertised products are believable.

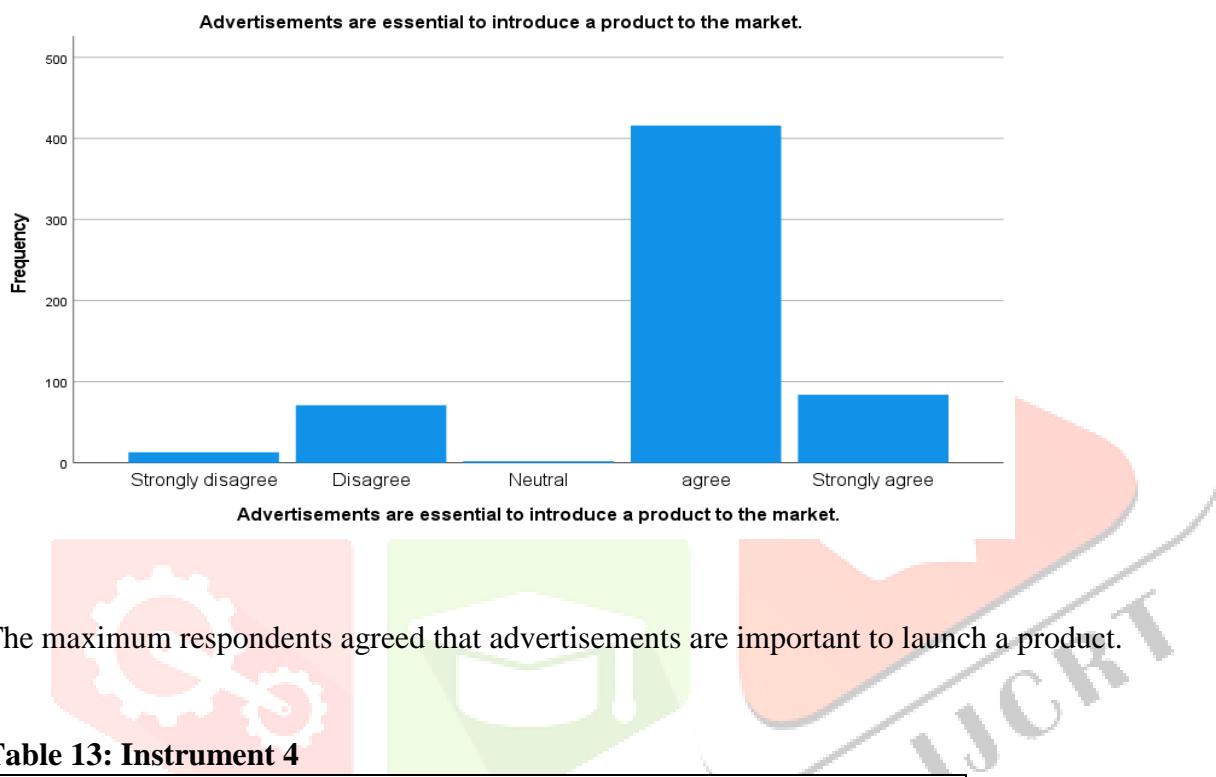
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	31	5.3	5.3	5.3
	Disagree	162	27.6	27.6	32.9
	Neutral	1	.2	.2	33.1
	agree	364	62.1	62.1	95.2
	Strongly agree	28	4.8	4.8	100.0
	Total	586	100.0	100.0	

Image 2

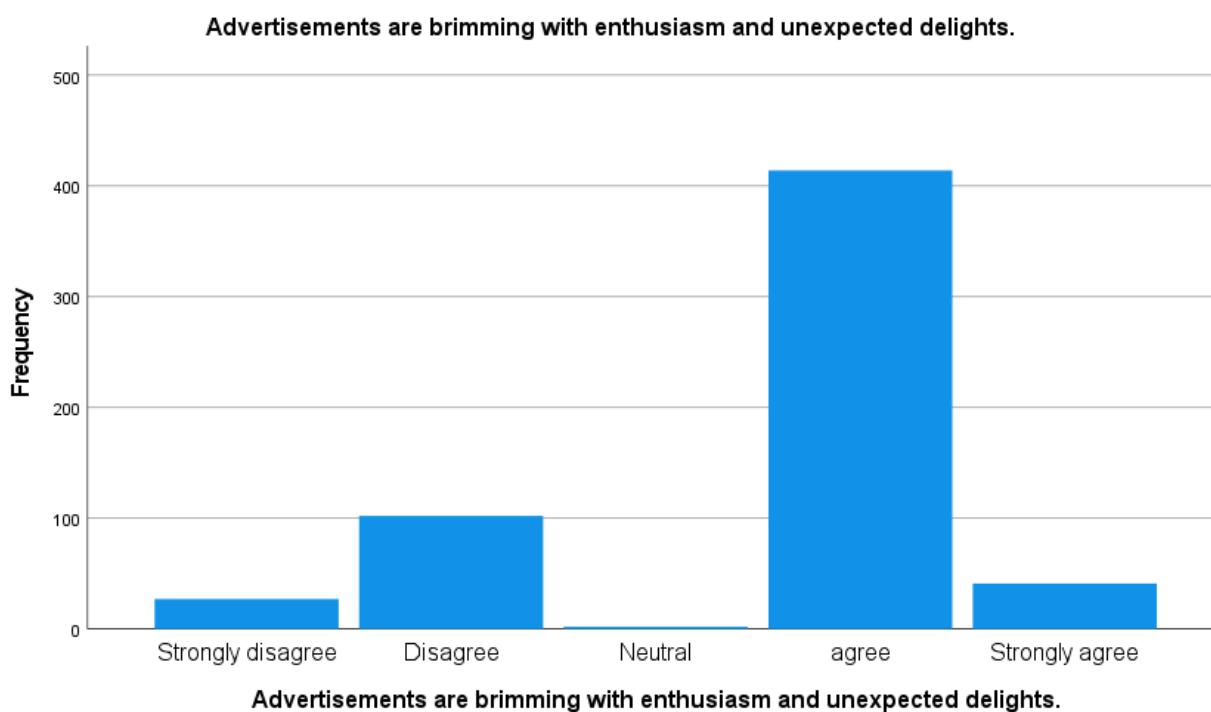
Here, maximum respondents agreed to the statement, “Advertised products are believable.”

Table 12: Instrument 3

Advertisements are essential to introduce a product to the market.				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	2.2	2.2
	Disagree	71	12.1	12.1
	Neutral	2	.3	.3
	agree	416	71.0	71.0
	Strongly agree	84	14.3	14.3
	Total	586	100.0	100.0

Image 3:**Table 13: Instrument 4**

Advertisements are brimming with enthusiasm and unexpected delights.				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	27	4.6	4.6
	Disagree	102	17.4	17.4
	Neutral	2	.3	.3
	agree	414	70.6	70.6
	Strongly agree	41	7.0	7.0
	Total	586	100.0	100.0

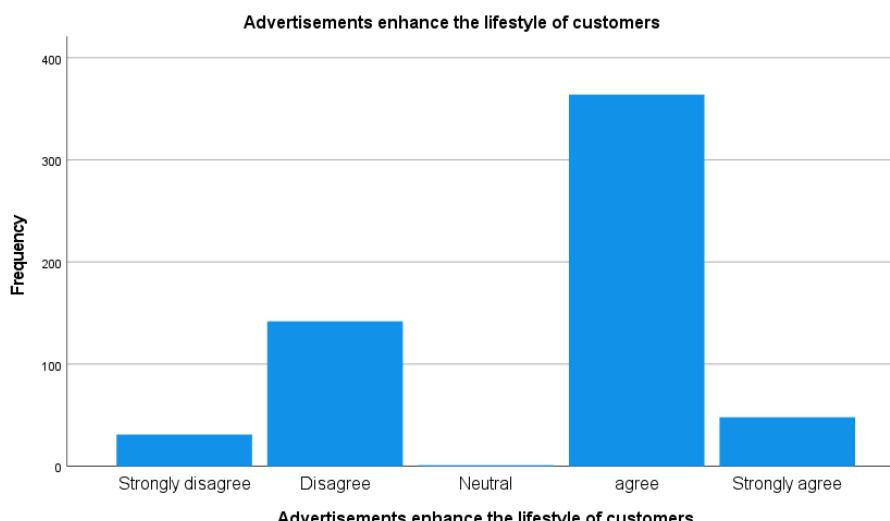
Image 4:

Advertisements are brimming with enthusiasm and unexpected delights.

“Advertisements are brimming with enthusiasm and unexpected delights”, maximum respondents are accepted this statement.

Table 14: Instrument 5

Advertisements enhance the lifestyle of customers					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Strongly disagree	31	5.3	5.3	5.3
	Disagree	142	24.2	24.2	29.5
	Neutral	1	.2	.2	29.7
	agree	364	62.1	62.1	91.8
	Strongly agree	48	8.2	8.2	100.0
	Total	586	100.0	100.0	

Image 5:

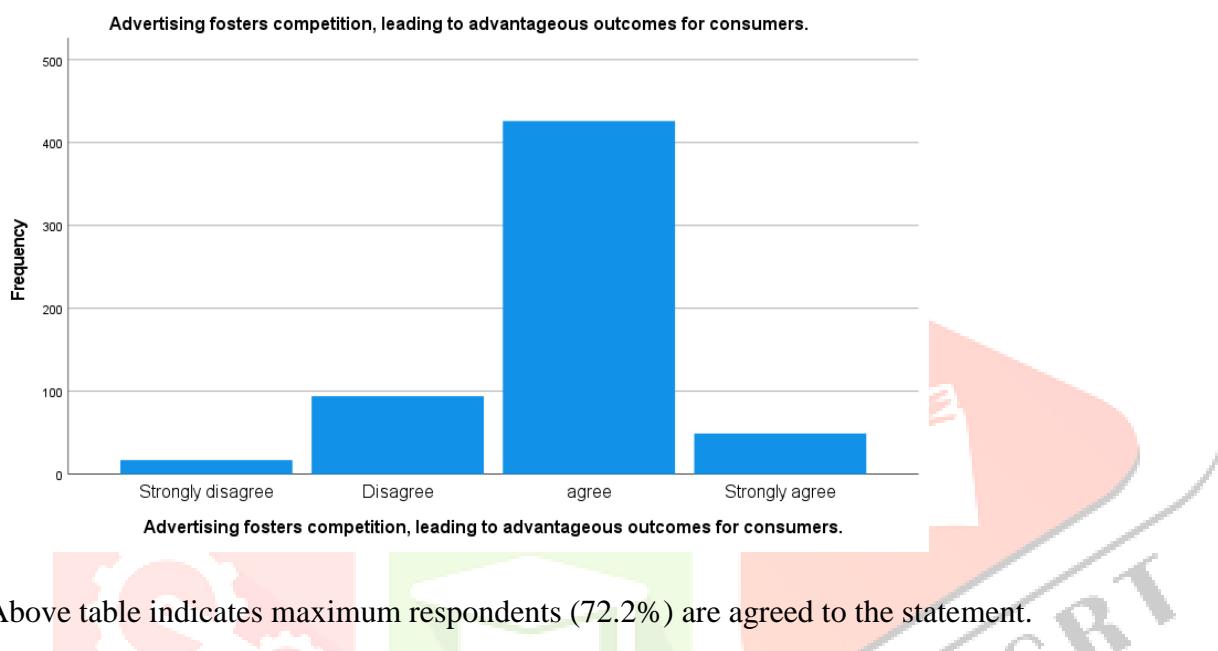
Advertisements enhance the lifestyle of customers

Above diagram indicates maximum respondents are agreed to the statement.

Table 15: Instrument 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	17	2.9	2.9	2.9
	Disagree	94	16.0	16.0	18.9
	agree	426	72.7	72.7	91.6
	Strongly agree	49	8.4	8.4	100.0
	Total	586	100.0	100.0	

Image 6:

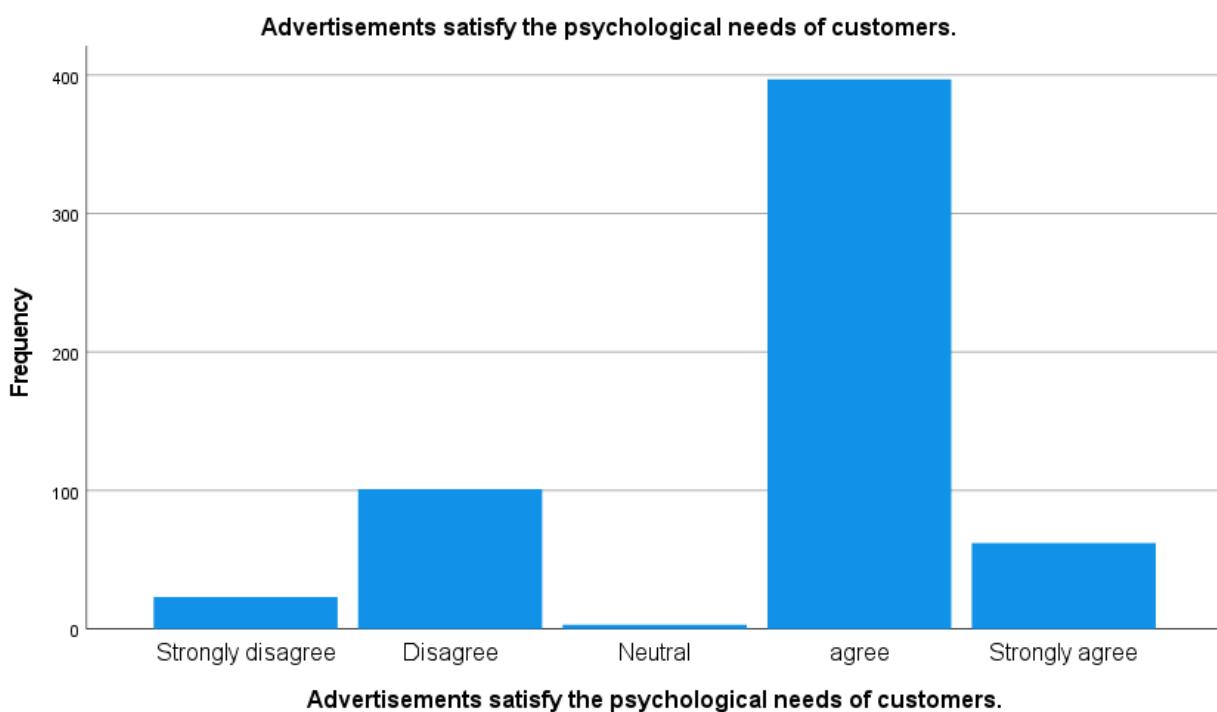


Above table indicates maximum respondents (72.2%) are agreed to the statement.

Table 16: Instrument 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	23	3.9	3.9	3.9
	Disagree	101	17.2	17.2	21.2
	Neutral	3	.5	.5	21.7
	agree	397	67.7	67.7	89.4
	Strongly agree	62	10.6	10.6	100.0
	Total	586	100.0	100.0	

Image 7:



Above table indicates maximum respondents (67.7%) are agreed to the statement.

Cluster analysis:

It is a statistical process through which different groups with the same characteristics are identified and segregated. This study focuses on the positive attitudes of customers toward advertisements. It is done through hierarchical cluster analysis. The following steps are involved in cluster analysis:

- Choosing a measuring rod of similarities.
- Select algorithm.
- Finalizing the clusters
- Analyze the clusters.

Take all the dependent variables and perform cluster analysis.

Table 17: Proximities

Case Processing Summary ^a						
Cases						
Valid		Missing		Total		
N	Percent	N	Percent	N	Percent	
586	100.0%	0	0.0%	586	100.0%	

a. Squared Euclidean Distance used

Squared Euclidean Distance indicates that this method was used for a clustering or distance-based analysis. This distance measure emphasizes large differences more significantly. The use of Squared Euclidean Distance suggests the analysis is likely focusing on grouping data points or understanding similarities/differences based on quantitative variables. In the table 17, 100% proximities indicate all variables under one cluster are highly correlated.

Table 18: Proximity Matrix:

Case	Proximity Matrix							
	Advertisers provide timely information about the Healthcare products.		Advertised products are believable.		Advertisers are essential to introduce a product to the market.		Advertisers are brimming with enthusiasm and unexpected delights.	
	Advertisers provide timely information about the Healthcare products.	Advertised products are believable.	Advertisers are essential to introduce a product to the market.	Advertisers are brimming with enthusiasm and unexpected delights.	Advertisers enhance the lifestyle of customers.	Advertising fosters competition, leading to advantageous outcomes for consumers.	Advertisers satisfy the psychological needs of customers.	
Advertisers provide timely information about the Healthcare products.	.000	923.000	1166.000	1055.000	1027.000	1071.000	1071.000	
Advertised products are believable.		923.000	.000	1093.000	962.000	962.000	890.000	1020.000
Advertisers are essential to introduce a product to the market.		1166.000	1093.000	.000	771.000	1005.000	829.000	825.000
Advertisers are brimming with enthusiasm and unexpected delights.		1055.000	962.000	771.000	.000	946.000	764.000	844.000
Advertisers enhance the lifestyle of customers		1027.000	962.000	1005.000	946.000	.000	794.000	974.000
Advertising fosters competition, leading to advantageous outcomes for consumers.		1071.000	890.000	829.000	764.000	794.000	.000	838.000
Advertisers satisfy the psychological needs of customers.		1071.000	1020.000	825.000	844.000	974.000	838.000	.000

The Proximity Matrix shows distances (or dissimilarities) between various advertising attributes based on a matrix. Each value in the matrix represents the distance between two advertising attributes. Smaller values indicate that the two attributes are more similar or closely related, whereas larger values signify greater differences.

The Proximity Matrix highlights that:

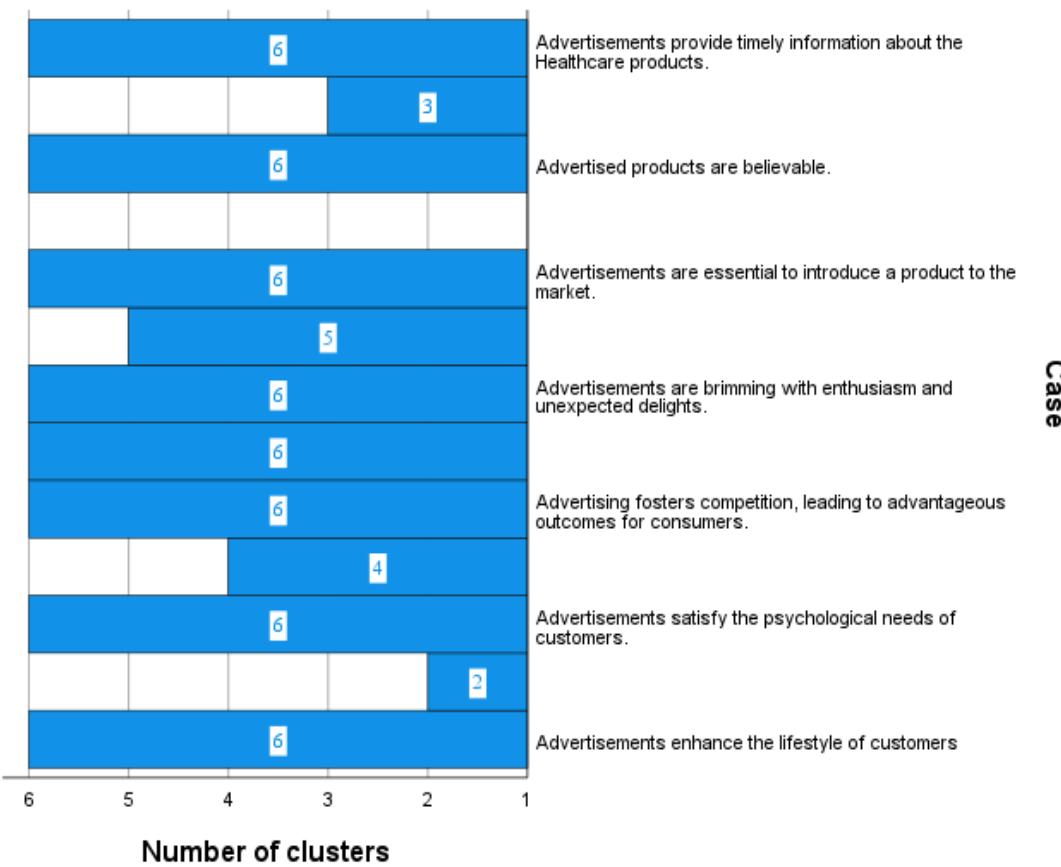
- Attributes related to enthusiasm, fostering competition, and satisfying needs are relatively similar and could form a cohesive group in marketing strategies.
- Attributes like "providing healthcare information" appear isolated, potentially addressing a more specific or specialized advertising focus.
- This matrix can guide segmentation or clustering in marketing strategies, grouping similar attributes for targeted messaging or campaigns.

Table19:Agglomeration Schedule

Agglomeration Schedule			Coefficients	Stage	Cluster	First		
Stage	Cluster Combined			Appears	Cluster 1	Cluster 2	Next Stage	
	Cluster 1	Cluster 2		Cluster 1	Cluster 2			
1	4	6	764.000	0	0	2		
2	3	4	800.000	0	1	3		
3	3	7	835.667	2	0	5		
4	1	2	923.000	0	0	6		
5	3	5	929.750	3	0	6		
6	1	3	1031.700	4	5	0		

Table 19 indicates agglomeration schedule using complete linkage technique . Agglomeration technique is a hierarchical methods which merges cluster based on proximity function. Complete linkage technique indicates the distance between two cluster. It measures distance based on maximum distance between any two members of the cluster. The hierarchical process known as agglomerative algorithm begins with every object in a distinct cluster. The two clusters that are most similar are joined to create a new aggregate cluster in each of the subsequent phases. Over the course of successive phases, similarity diminishes.

Image 8: clustered bar chart



The image presents a clustered bar chart that relates specific attributes or dimensions with the number of clusters formed in a hierarchical clustering analysis. **Vertical Axis** Displays the number of clusters formed. **Horizontal Categories** each column represents a characteristic or perception of advertisements. Blue-shaded cells indicate which clusters are associated with a specific characteristic or perception. This analysis can help segment consumers or stakeholders based on their perceptions of advertising, aiding targeted marketing strategies.

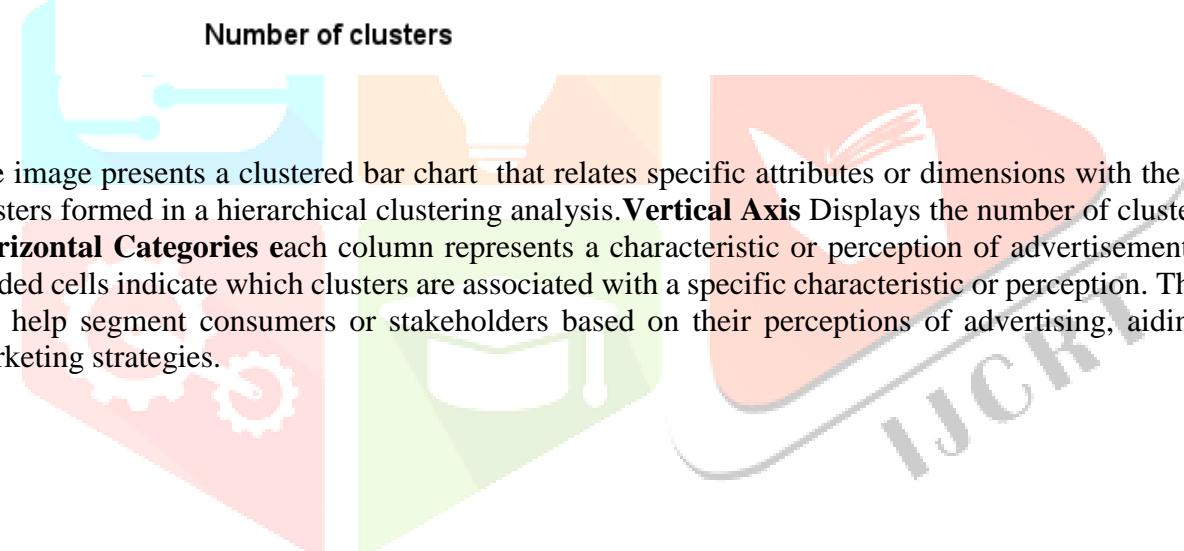
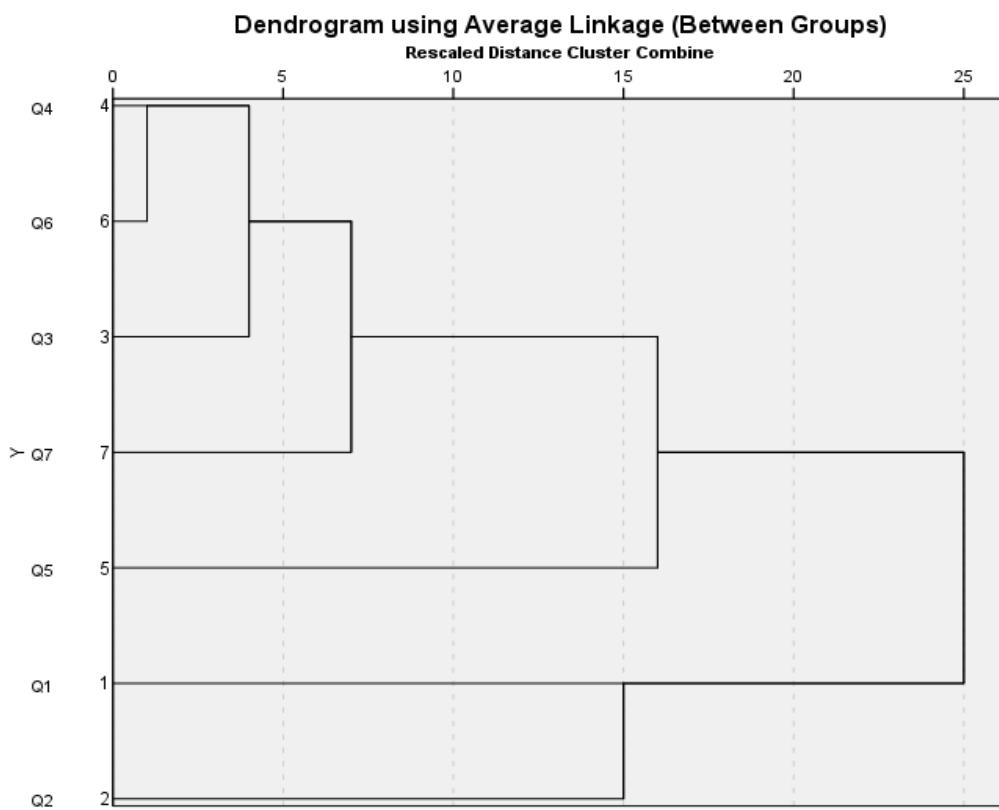


Image 9: Dendogram



The image shows a **dendrogram** created using average linkage clustering. The dendrogram visually represents the hierarchical clustering process. Each horizontal line indicates the merging of two clusters or data points. The height at which clusters merge (rescaled distance) represents the dissimilarity between clusters.

The steps shown below are used to select the cluster that includes all of the groups, including the dependent variables. Cluster I, Cluster II, and Cluster III are identified for the under test factors. A dendrogram is created by rescaling the spaces between 0 and 25, which shows that the final convergent advance to a single cluster solution occurs inside a space of 25.

Table 20: Cluster membership

Name of variables	Variables details	Cluster I	Cluster II	Cluster III
Q1	Advertisements provide timely information about the Healthcare products.			Cluster 1, cluster 4 and Cluster 8
Q2	Advertised products are believable.	Cluster 2 & Cluster 6		
Q3	Advertisements are essential to introduce a product to the market.		Cluster 3 and Cluster 7 and Cluster 8	
Q4	Advertisements are brimming with enthusiasm and unexpected delights.	Cluster 6		Cluster1
Q5	Advertisements enhance the lifestyle of customers	Cluster 2 and Cluster 6		
Q6	Advertising fosters competition, leading to advantageous outcomes for consumers.		Cluster5	Cluster1
Q7	Advertisements satisfy the psychological needs of customers.	Cluster 2 and Cluster		

		6 and Cluster 4		
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The cluster memberships of the cases in the particular observation are shown in Table 20. The current investigation reveals three cluster groups.

Cluster I is the main cluster that show a positive impact of advertisement on consumer mind.

Cluster I : Life style and psychological appeal includes clusters 2,6,4. it is strong cluster that affect consumer perception positively. This cluster indicates to attract costumer positively, first capture their psychology.

Cluster II: Informational and Introduction-Oriented cluster it has a moderate impact on consumer mind. It includes cluster number 3,5,7,8.

Cluster III: Distinct and Specialized Information Cluster it has least impact on consumer mind. It includes cluster number 1,4,8.

Cluster details:

Cluster 1:

1. Focus on **healthcare information, enthusiasm, and competition.**
2. Likely represents practical and energetic aspects of advertising.

Cluster 2:

1. Highlights **credibility, lifestyle enhancement, and psychological needs.**
2. Suggests an emphasis on trust and aspirational connections.

Cluster 3:

1. Strongly aligned with **product introduction.**
2. Likely represents a cluster focused on market entry strategies.

Cluster 4:

1. Emphasizes **healthcare information.**
2. Likely a niche cluster for health-related advertising.

Cluster 5:

1. Focuses on **competition** and practical relevance.
2. Represents a cluster centered on strategic market advantages.

Cluster 6:

1. Balances **credibility, psychological needs, and enthusiasm.**
2. Likely represents an emotional and trust-based advertising approach.

Cluster 7:

1. Highlights **product introduction.**
2. Similar to Cluster 3, with a focus on launching products.

Cluster 8:

Less dominant but may represent a generalist cluster.

To validate the cluster and the variables under cluster K-Means cluster analysis was performed.

Table21:

	Initial Cluster Centers							
	1	2	3	4	5	6	7	8
Advertisements provide timely information about the Healthcare products.	4	2	5	4	5	1	1	4
Advertised products are believable.	1	5	1	4	5	1	1	1
Advertisements are essential to introduce a product to the market.	5	2	5	4	5	5	1	1
Advertisements are brimming with enthusiasm and unexpected delights.	4	2	2	1	5	4	1	1
Advertisements enhance the lifestyle of customers	2	4	4	1	5	4	1	5
Advertising fosters competition, leading to advantageous outcomes for consumers.	4	2	1	1	5	5	1	5
Advertisements satisfy the psychological needs of customers.	1	5	5	1	5	5	4	4

The table lists initial cluster centers for different variables related to advertisements across multiple clusters. Each row represents a key statement or perception about advertisements, and each column provides the score associated with a particular cluster.

The cluster centres from the sample are obtained using the initial cluster centers table. In non-hierarchical clustering, the cluster centres serve as the main starting points. In the vicinity of these centres, or seeds, clusters are formed.

Table 22:

Iteration History^a

Iteration	Change in Cluster Centers							
	1	2	3	4	5	6	7	8
1	2.745	2.631	2.422	2.614	2.481	2.742	2.607	2.657
2	.500	.640	.684	.671	.107	.215	.510	.456
3	.183	.231	.508	.203	.008	.178	.368	.187
4	.094	.224	.108	.079	.010	.138	.180	.129
5	.056	.214	.133	.129	.000	.066	.195	.108
6	.069	.093	.000	.000	.011	.068	.000	.000
7	.000	.057	.000	.000	.000	.028	.000	.000
8	.000	.087	.000	.161	.000	.000	.000	.000
9	.000	.000	.000	.000	.000	.000	.000	.000

a. Convergence achieved due to no or small change in cluster centers. The maximum absolute coordinate change for any center is .000. The current iteration is 9. The minimum distance between initial centers is 5.385.

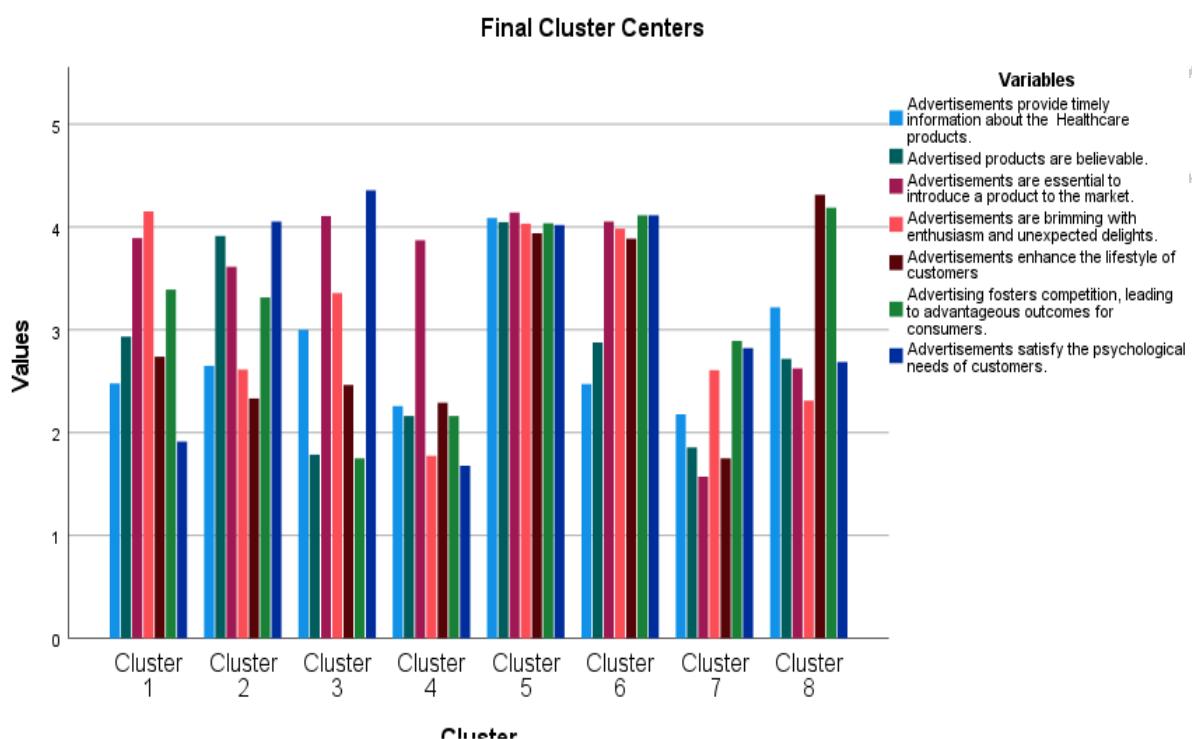
Iteration investigates how the grouping progresses at each level. The cluster centres settle close to the final area location following the early, frequent movements. It is evident from Table 22 that the maximum absolute coordinate change for each cluster centre after nine rounds is 000.

Table 23:

	Final Cluster Centers							
	1	2	3	4	5	6	7	8
Advertisements provide timely information about the Healthcare products.	2	3	3	2	4	2	2	3
Advertised products are believable.	3	4	2	2	4	3	2	3
Advertisements are essential to introduce a product to the market.	4	4	4	4	4	4	2	3
Advertisements are brimming with enthusiasm and unexpected delights.	4	3	3	2	4	4	3	2
Advertisements enhance the lifestyle of customers	3	2	2	2	4	4	2	4
Advertising fosters competition, leading to advantageous outcomes for consumers.	3	3	2	2	4	4	3	4
Advertisements satisfy the psychological needs of customers.	2	4	4	2	4	4	3	3

This table represents the **final cluster centers** for a clustering analysis. The values indicate the average scores of variables (rows) within each cluster (columns). Each cluster summarizes specific characteristics or features based on the input data. The table helps in understanding how each cluster represents distinct consumer perceptions or priorities about advertisements. This can guide targeted marketing strategies by aligning advertising efforts with the dominant characteristics of each cluster.

Image 10



This bar chart visually represents the **final cluster centers**, providing insights into the average values of variables across different clusters. Each bar corresponds to a specific variable, grouped by clusters.

Clusters and Variable Patterns: Each cluster has distinct characteristics based on the heights of the bars (values of variables):

- **Cluster 1:** Moderate emphasis on most variables, with relatively higher values for "Advertisements are essential to introduce a product to the market."
- **Cluster 2:** Strong emphasis on "Advertised products are believable" and "Advertisements satisfy the psychological needs of customers."

- **Cluster 3:** Balanced emphasis, with peaks for "Advertisements are essential to introduce a product to the market."
- **Cluster 4:** High focus on "Advertisements satisfy the psychological needs of customers."
- **Cluster 5:** Moderate across all variables, no standout emphasis.
- **Cluster 6:** Strong emphasis on "Advertisements enhance the lifestyle of customers."
- **Cluster 7:** Highlights "Advertisements are essential to introduce a product to the market."
- **Cluster 8:** Balanced cluster with slightly higher values for healthcare-related information.

Table 24:

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Advertisements provide timely information about the Healthcare products.	50.878	7	.637	578	79.812	<.001
Advertised products are believable.	51.510	7	.581	578	88.642	<.001
Advertisements are essential to introduce a product to the market.	32.001	7	.426	578	75.107	<.001
Advertisements are brimming with enthusiasm and unexpected delights.	45.454	7	.472	578	96.393	<.001
Advertisements enhance the lifestyle of customers	49.933	7	.624	578	80.031	<.001
Advertising fosters competition, leading to advantageous outcomes for consumers.	37.990	7	.433	578	87.671	<.001
Advertisements satisfy the psychological needs of customers.	55.744	7	.362	578	154.091	<.001

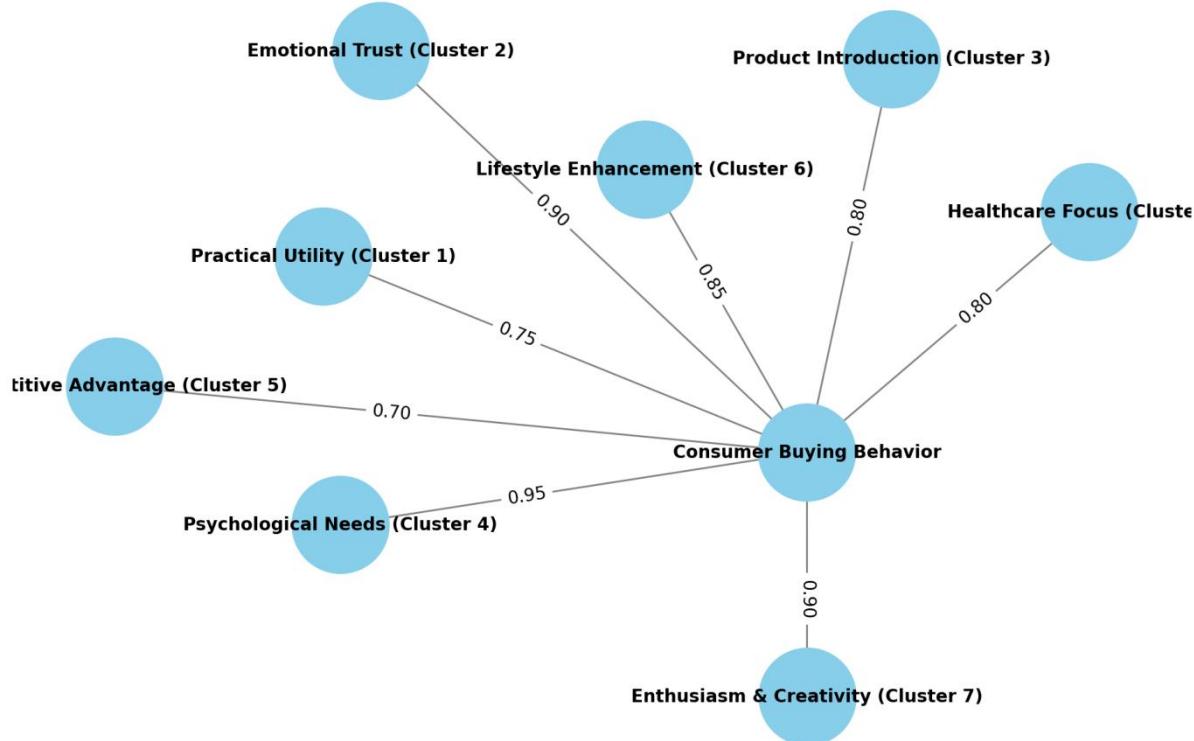
The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

The ANOVA table evaluates the differences in mean scores of various advertising attributes across clusters. Each row corresponds to an advertising attribute, showing the variation in scores between clusters (Cluster Mean Square) and within clusters (Error Mean Square). The **F-statistic** indicates how much the means differ between clusters relative to the variability within clusters. The **Significance (Sig.) values**, all less than 0.001, demonstrate that the differences in means across clusters for each attribute are statistically significant.

For example, the attribute "**Advertisements satisfy the psychological needs of customers**" has the highest F-statistic (154.091), indicating substantial variation across clusters. This suggests that some clusters place much more emphasis on satisfying psychological needs than others. Similarly, attributes like "**Advertised products are believable**" ($F = 88.642$) and "**Advertisements are brimming with enthusiasm and unexpected delights**" ($F = 96.393$) also show strong differences among clusters.

In conclusion, the ANOVA confirms that the clusters are well-differentiated based on the advertising attributes, validating the segmentation. These results highlight the distinct priorities of each cluster, such as credibility, emotional appeal, and psychological needs, providing a solid foundation for targeted marketing strategies.

Effect of Clusters on Consumer Buying Behavior



(JAPAN Model of Positive Advertising Attitudes (Joyful Appeals Promote Authentic Nurturing) by Dr. Debasis Ghosh and Anindita Sarkar)

The visualization above illustrates the impact of each cluster on Consumer Buying Behavior, with edges representing the degree of influence (on a 0 to 1 scale). Each cluster contributes uniquely to consumer purchasing behaviour:

1. Highest Impact:
 - Psychological Needs (Cluster 4): Most influential with a 0.95 impact, emphasizing the importance of addressing emotional and psychological connections.
 - Emotional Trust (Cluster 2) and Enthusiasm & Creativity (Cluster 7): Strong impacts at 0.90, highlighting the role of trust and engaging, creative content.
2. Moderate Impact:
 - Lifestyle Enhancement (Cluster 6): Affects consumer behavior significantly with a 0.85 impact.
 - Healthcare Focus (Cluster 8) and Product Introduction (Cluster 3): Moderate influences at 0.80, suggesting relevance in niche or specific contexts.
3. Lower Impact:
 - Practical Utility (Cluster 1): A moderate but lower influence at 0.75, reflecting its importance in utilitarian messaging.
 - Competitive Advantage (Cluster 5): Lowest impact at 0.70, indicating competition is less critical than emotional and lifestyle appeals.

This model provides a structured view for marketers to prioritize strategies targeting clusters with the highest impact on purchasing behaviour.

Managerial implications:

The findings of the research, have significant managerial implications for marketing and advertising strategies. The segmentation of consumers into distinct clusters based on their perceptions and preferences toward advertising attributes allows managers to adopt a highly targeted and personalized approach. For instance, clusters with a high emphasis on "Advertisements satisfy the psychological needs of customers" indicate a consumer base that values emotional and psychological connections in advertisements. For these segments, marketers should design campaigns that evoke feelings of trust, security, or aspirations. Similarly, clusters that prioritize attributes like "Advertised products are believable" highlight the importance of credibility and authenticity in communication, suggesting a focus on testimonials, expert endorsements, or transparency in messaging to cater to such groups.

Furthermore, the significant differentiation observed in attributes like "Advertisements are brimming with enthusiasm and unexpected delights" implies that some segments respond strongly to creative, energetic, and

innovative campaigns. Managers targeting these clusters should invest in high-impact, visually engaging, and creative content that captivates and surprises the audience. On the other hand, clusters with higher scores for "Advertisements provide timely information about the healthcare products" emphasize the practical and informational role of advertisements. For these consumers, managers should ensure that campaigns are rich in factual, clear, and concise information, particularly in industries like healthcare, where precision and relevance are critical.

In addition, clusters that value "Advertisements enhance the lifestyle of customers" suggest the need for aspirational branding, showcasing how products and services align with the desired lifestyles of consumers. This is particularly relevant for luxury, fashion, and lifestyle brands aiming to connect with aspirational consumers. Finally, the significant F-statistics across all attributes demonstrate robust differentiation among clusters, highlighting that a one-size-fits-all approach is suboptimal.

Managers should therefore leverage these insights to develop tailored messaging strategies for each cluster, optimize resource allocation in advertising efforts, and improve consumer engagement by resonating more deeply with specific needs and priorities. Overall, the research provides actionable insights for achieving higher effectiveness in marketing campaigns by aligning them with the unique characteristics and expectations of well-defined consumer segments.

Conclusion:

The research findings reveal clear and statistically significant differences in consumer perceptions of advertising attributes across clusters, providing valuable insights into segmentation and targeted marketing. The ANOVA analysis confirms the robustness of the clusters, with significant F-values for all variables, demonstrating that consumer preferences and responses to advertising differ markedly across segments. For instance, attributes like "Advertisements satisfy the psychological needs of customers" and "Advertised products are believable" highlight the importance of trust, emotional appeal, and credibility, which resonate strongly with certain clusters. Meanwhile, other attributes, such as "Advertisements provide timely information about healthcare products" and "Advertisements are essential to introduce a product to the market," underscore the need for practical and informational campaigns tailored to consumers seeking clarity and utility in advertisements. Furthermore, clusters that value "Advertisements enhance the lifestyle of customers" and "Advertisements are brimming with enthusiasm and unexpected delights" point to the significance of aspirational and creative branding strategies. Together, the data validate the effectiveness of a segmented approach, as one-size-fits-all advertising strategies fail to address the nuanced expectations and motivations of diverse consumer groups. The findings emphasize the importance of aligning advertising efforts with specific cluster characteristics to maximize engagement, build trust, and drive desired outcomes, providing a strategic roadmap for optimizing marketing initiatives across diverse market segments.

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