

Impact Of Social Media Advertising On Consumer Shopping Behaviour Towards Consumer Durable Goods – Principal Component Analysis

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Abstract

In the contemporary view, social media stands as a formidable force, facilitating rapid dissemination of information and serving as a prominent platform for advertising. Businesses adeptly leverage social media's advanced management information systems to tailor advertisements to match the preferences and behaviors of their target audience, thereby enhancing sales performance. Notably, social media's influence transcends generational boundaries, captivating younger demographics who integrate it seamlessly into their daily lives. This demographic's habitual engagement with shared content amplifies its impact, fueled by ubiquitous smart mobile phones and internet connectivity. The evolution of social media has prompted corporate entities to devise innovative marketing strategies across various sectors, anchored in Web 2.0 principles that foster virtual communities. Central to this ecosystem is social media advertising, which optimizes outreach through targeted delivery to users across platforms. By facilitating cost-effective promotion, social media advertising promotes financial inclusion among businesses, driving sales and extending market reach.

Keywords: Social media advertising, consumer behavior, durable goods, management information systems, generational boundaries, targeted delivery, sales performance.

Introduction

Social media wields profound influence in contemporary society, serving as a potent vehicle for the rapid dissemination of news and information, particularly in the realm of advertising. Leveraging the sophisticated management information systems of social platforms, businesses adeptly customize advertisements to align with the preferences and behaviors of their target audience, thereby enhancing sales performance. Notably, social media's appeal transcends generational boundaries, captivating younger demographics who seamlessly integrate it into both personal and professional spheres. This demographic's habitual engagement with shared content amplifies its impact, facilitated by the ubiquitous presence of smart mobile phones and internet connectivity. The evolution of social media has spurred corporate entities to craft innovative marketing strategies spanning diverse sectors, from telecommunications to education. Anchored in Web 2.0 principles, social media fosters virtual communities where users exchange ideas and generate content, underscoring its integral role in modern communication. Central to this ecosystem is social media advertising, which creates advertisements to users across platforms, optimizing outreach through targeted delivery. By facilitating cost-effective promotion, social media advertising promotes financial inclusion among businesses, driving sales and extending market reach.

Review of Literature

Several studies have shed light on the profound impact of social media on consumer behavior and marketing strategies. Md Rukon Miah et al. (2022) conducted research on Bangladeshi consumers during the COVID-19 pandemic, revealing that social media, particularly through celebrity endorsements, promotional tools, and online reviews, significantly influences online shopping behavior. Conversely, Walid Nabil Iblasi et al. (2016) explored social media's role in purchasing decisions, affirming its effectiveness in influencing various stages of the decision-making process. Senthil et al. (2013) delved into consumers' perceptions of online advertising, noting its evolving impact on consumer opinions and the factors that enhance ad effectiveness. Ayben Ceyhan (2019) focused on brand perception through Instagram marketing, highlighting the platform's influence on brand loyalty and purchase

intentions. Zulqurnain ALI et al. (2016) and Mahesh V.J and Thanushree H (2020) examined the impact of social media marketing on consumer perceptions and purchasing behavior, emphasizing the importance of targeted marketing approaches. Alalwan (2018) identified key factors affecting purchase intention through social media advertising, while Indrani Kona and Krishna Mohan (2022) highlighted the significance of social media marketing on consumer electronics purchasing decisions. Lastly, Duangruthai Voramontri and Leslie Klieb (2019) and Reshma Roy (2018) investigated the broader impact of social media on consumer behavior, emphasizing its role in facilitating information search and influencing decision-making processes. These studies collectively underscore the pivotal role of social media in shaping consumer behavior and marketing strategies across various industries.

Research Gap

The review of literature highlights several research gaps in the study of social media marketing's impact on consumer behavior. Specifically, there's a dearth of research into the effectiveness of specific social media content types, such as user-generated content and interactive elements, on consumer purchasing behavior. Moreover, while existing studies often focus on the positive effects of social media marketing, there's a need to explore potential negative consequences, such as information overload and privacy concerns. Additionally, research on the generalizability of findings across diverse cultural contexts and demographic groups is limited. Addressing these gaps could provide valuable insights for marketers seeking to develop more effective and ethical social media marketing strategies in global markets.

Objective

- ❖ To identify and analyze the key components of social media advertising that influence consumer shopping behavior towards consumer durable goods using principal component analysis.

Principal Component Analysis (PCA)

Principal Component Analysis (PCA) serves as an ideal statistical approach for discerning and examining the fundamental

components of social media advertising that shape consumer shopping behavior concerning consumer durable goods. PCA's applicability is multi-fold: firstly, it streamlines the complexity of data by transforming correlated variables into a concise set of uncorrelated principal components, particularly advantageous when dealing with a plethora of variables related to social media advertising and consumer behavior. Secondly, PCA discerns the principal components that encapsulate the highest variance within the dataset, enabling researchers to pinpoint the pivotal components of social media advertising influencing consumer shopping behavior. Thirdly, PCA facilitates data interpretation by offering a succinct portrayal of the data's underlying structure, fostering comprehension of the relationships between variables and the diverse aspects of social media advertising that impact variations in consumer shopping behavior. Additionally, PCA adeptly addresses multicollinearity concerns by generating orthogonal components, ensuring independence from redundant or highly correlated variables. Lastly, PCA enables visualization of the data in a reduced-dimensional space, allowing researchers to plot principal components, visualize inter-variable relationships, and identify emergent patterns or clusters, thereby facilitating the interpretation of results. In summary, PCA presents a robust and efficient methodology for unraveling the pivotal components of social media advertising driving consumer shopping behavior towards consumer durable goods, aligning seamlessly with the research objective.

Descriptive Statistics and Communalities

The table provides descriptive statistics and communalities for key factors related to social media advertising and their impact on consumer shopping behavior towards consumer durable goods. Each row represents a specific factor, including "Social Media Advertisement and Brand Awareness," "Buying decision process and procedure," "Celebrity Endorsements and Considerations," and others. The "Mean" column indicates the average score for each factor within the sample, while the "Std. Deviation" column reflects the variability of responses. The "Analysis N" column denotes the number of responses analyzed for each factor, which is consistent at 100 across all variables. The "Initial" and "Extraction" columns present communalities, representing the

proportion of variance in each variable explained by the extracted principal components. Higher communalities suggest that a larger portion of the variable's variance is captured by the principal components. The extraction method employed is Principal Component Analysis, a statistical technique used to identify underlying patterns and relationships within data.

Table No.1 Descriptive Statistics and Communalities for the Impact of Social Media Advertising on Consumer Shopping Behaviour Towards Consumer Durable Goods

Factors	Mean	Std. Deviation	Analysis N	Initial	Extraction
Social Media Advertisement and Brand Awareness	2.9500	1.38078	100	1.000	.911
Social Media Advertisement and Brand Loyalty	2.6800	1.42758	100	1.000	.931
Buying decision process and procedure	3.0300	1.43164	100	1.000	.918
Celebrity Endorsements and Considerations	2.9900	1.32188	100	1.000	.914
Consumer Intention and Inducement	3.1200	1.40906	100	1.000	.943
Customer Engagement and Impacts	2.5800	1.31180	100	1.000	.935
Digital Marketing Strategies	2.9800	1.25513	100	1.000	.905
Purchase Intention and Product Preference	2.7200	1.23975	100	1.000	.882
Rich Media and Shopping Websites Advertisement	2.9900	1.47364	100	1.000	.934

Traditional Mass Media	2.6700	1.40025	100	1.000	.942
Extraction Method: Principal Component Analysis.					

Source: Computer Primary Data

The Table No.1 presents descriptive statistics and communalities for various factors related to social media advertising and consumer shopping behavior towards consumer durable goods. Mean and standard deviation values are provided for each factor, indicating the average score and variability within the sample, respectively. Analysis N denotes the number of responses analyzed for each factor, which is consistent at 100 for all variables. The communalities represent the proportion of variance in each variable accounted for by the extracted principal components, ranging from .882 to .943. Higher communalities suggest that a larger portion of the variable's variance is explained by the principal components. Overall, the communalities indicate that the extracted principal components capture a substantial amount of variance in the variables, highlighting the effectiveness of the principal component analysis in identifying underlying patterns and relationships within the dataset.

Total variance explained

The table illustrates the variance explained by principal components derived from Principal Component Analysis (PCA) in the study on "Impact of Social Media Advertising on Consumer Shopping Behavior Towards Consumer Durable Goods." Numbered from 1 to 10, these components indicate the significance in explaining variance within the data. Initial eigenvalues in the table reflect the variance attributed to each component before extraction, while the extraction sums of squared loadings represent the proportion of total variance explained post-extraction. The "Total" column quantifies the overall variance explained by each component, with "% of Variance" denoting the percentage relative to the total variance. The "Cumulative %" column shows the cumulative percentage of variance explained, illustrating the proportion of total variance accounted for as additional components are considered. This analysis employs PCA to discern underlying patterns and relationships within the data by reducing dimensionality.

Table No.2 Total Variance Explained for the Impact of Social Media Advertising on Consumer Shopping Behaviour Towards Consumer Durable Goods

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.268	72.678	72.678	7.268	72.678	72.678
2	1.946	19.461	92.139	1.946	19.461	92.139
3	.157	1.566	93.705			
4	.139	1.389	95.093			
5	.119	1.190	96.283			
6	.105	1.049	97.333			
7	.092	.918	98.250			
8	.073	.735	98.985			
9	.056	.555	99.541			
10	.046	.459	100.000			
Extraction Method: Principal Component Analysis.						

Source: Computed Primary Data

The table presents the total variance explained by each principal component extracted through Principal Component Analysis (PCA) in the study on the "Impact of Social Media Advertising on Consumer Shopping Behavior Towards Consumer Durable Goods." Initial Eigenvalues indicate the variance attributed to each component before extraction, with Component 1 having the highest initial eigenvalue, suggesting it explains the most variance. Extraction Sums of Squared Loadings show the proportion of total

variance explained by each component after extraction, with Component 1 also having the highest value, highlighting its importance. The % of Variance column reveals the percentage of variance explained by each component relative to the total variance, with Component 1 capturing a significant 72.678%. Cumulative % displays the cumulative percentage of variance explained, indicating that by the 2nd component, 92.139% of the total variance is explained, reaching 100% by the 10th component. Overall, these values provide insight into the relative importance of each component in understanding consumer shopping behavior towards consumer durables goods, with the early components capturing the most essential information in the data.

Component Matrix

The Component Matrix provides a correlation between the original variables and the principal components extracted through Principal Component Analysis (PCA) in the study focusing on the "Impact of Social Media Advertising on Consumer Shopping Behavior Towards Consumer Durables Goods." The table displays the correlation coefficients for each variable with the identified principal components. Component 1 and Component 2 are represented across the columns, with each row indicating the correlation of a specific variable with these components. Positive values suggest a positive correlation, while negative values indicate a negative correlation. The extraction method utilized is Principal Component Analysis, which is commonly employed to identify underlying patterns and relationships within data by reducing its dimensionality. In this case, two components were extracted, providing insights into the associations between the original variables and the identified principal components.

Table No.3 Component Matrix for the Impact of Social Media Advertising on Consumer Shopping Behaviour Towards Consumer Durable Goods

Factors	Component	
	1	2
Social Media Advertisement and Brand Awareness	.954	-.011

Social Media Advertisement and Brand Loyalty	.965	- .023
Buying decision process and procedure	.958	.000
Celebrity Endorsements and Considerations	.956	- .004
Consumer Intention and Inducement	.971	- .007
Customer Engagement and Impacts	.965	.065
Digital Marketing Strategies	.949	- .062
Purchase Intention and Product Preference	.888	.307
Rich Media and Shopping Websites Advertisement	- .161	.953
Traditional Mass Media	- .084	.967
Extraction Method: Principal Component Analysis.		
a. 2 components extracted.		

Source: Computed Primary Data

The Component Matrix reveals the correlation coefficients between the original variables and the principal components extracted through Principal Component Analysis (PCA) in the study on the "Impact of Social Media Advertising on Consumer Shopping Behavior Towards Consumer Durables Goods." Component 1 shows strong positive correlations with variables related to social media advertising, brand awareness, brand loyalty, buying decision processes, celebrity endorsements, consumer intention, customer engagement, and digital marketing strategies. These variables contribute significantly to Component 1. On the other hand, Component 2 exhibits positive correlations with variables related to purchase intention, product preference, rich media, and shopping website advertisements, as well as traditional mass media. These variables are associated with Component 2. The Component Matrix provides valuable insights into how these original variables relate to the principal components, shedding light on the underlying relationships within the data.

Findings:

- ❖ Component 1: This component primarily encompasses variables related to social media advertising, brand awareness, consumer engagement, and digital marketing strategies. It suggests that these factors play a significant role in influencing consumer shopping behavior towards consumer durables goods. Consumers' awareness of brands through social media advertising and their engagement with digital marketing strategies contribute substantially to their purchasing decisions.
- ❖ Component 2: This component comprises variables associated with purchase intention, product preference, and various types of media advertisements, including rich media and traditional mass media. It indicates that consumers' intention to purchase specific products, along with their preferences and exposure to different advertising channels, significantly impact their shopping behavior towards consumer durables goods.

Suggestions:

- ❖ Enhanced Social Media Advertising: Given the significant influence of social media advertising on consumer behavior, businesses should focus on developing more effective and engaging social media campaigns. This could involve leveraging interactive content, user-generated reviews, and influencer partnerships to enhance brand awareness and consumer engagement.
- ❖ Targeted Marketing Strategies: Understanding consumers' purchase intentions and product preferences is crucial for developing targeted marketing strategies. By tailoring advertising content and channels to match consumers' preferences, businesses can effectively influence their shopping behavior towards consumer durables goods.
- ❖ Diverse Advertising Channels: While social media advertising plays a pivotal role, businesses should also consider leveraging other advertising channels such as traditional mass media and rich media advertisements to reach a wider audience. A diverse advertising approach can help capture consumers' attention across various platforms and increase brand visibility.

Conclusion:

The findings of the Principal Component Analysis (PCA) highlight the significant influence of social media advertising and consumer preferences on shopping behavior towards consumer durables goods. Businesses can leverage these insights to develop more targeted and engaging marketing strategies that resonate with consumers and drive purchase decisions. By understanding the underlying factors that shape consumer behavior, businesses can adapt their advertising approaches to effectively meet the evolving needs and preferences of their target audience in the competitive consumer durables market.

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