

A STUDY ON THE IMPACT OF SOCIAL MEDIA ALGORITHMS ON CONSUMER BEHAVIOUR

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Abstract: The rapid growth of social media platforms has significantly transformed consumer behaviour by changing the way individuals search for information, interact with brands, and make purchasing decisions. Social media algorithms powered by artificial intelligence and machine learning analyse users' preferences, browsing patterns, and engagement activities to deliver personalized content, targeted advertisements, and product recommendations. The present study titled "A Study on the Impact of Social Media Algorithms on Consumer Behaviour" aims to examine the influence of social media algorithms on consumers' purchasing decisions, brand engagement, trust, and buying behaviour in Thoothukudi District. The study adopted a descriptive research design and collected primary data from 130 respondents through a structured questionnaire using a five-point Likert scale. The respondents were selected using a convenience sampling method. Statistical tools such as Percentage Analysis, One-Way ANOVA, Independent Sample t-test, and Kruskal-Wallis Test were applied to analyse the relationship between demographic variables and consumer perceptions towards social media algorithms. The findings reveal that age significantly influences certain aspects of algorithm-driven purchasing behaviour, particularly purchase decisions influenced by frequently appearing social media content. However, gender and occupation do not significantly affect consumers' perceptions towards social media algorithms, product recommendations, and purchase decisions. The study concludes that social media algorithms play a crucial role in shaping modern consumer behaviour by enhancing personalized marketing, improving product discovery, and influencing purchase intentions. The findings provide valuable insights for marketers and businesses to develop effective, ethical, and consumer-oriented social media marketing strategies.

Keywords: Social Media Algorithms, Consumer Behaviour, Personalized Content, Targeted Advertising, Product Recommendations, Purchase Decisions, Digital Marketing, Social Media Marketing, Brand Engagement.

1. INTRODUCTION

Social media has become one of the most influential digital platforms, transforming the way consumers discover information, interact with brands, and make purchasing decisions. Platforms such as Instagram, Facebook, YouTube, TikTok, and X (formerly Twitter) use advanced algorithms powered by artificial intelligence and machine learning to analyse users' preferences, browsing history, and engagement patterns. These algorithms personalize content by displaying relevant advertisements, product recommendations, influencer posts, and promotional campaigns that match individual interests. As a result, consumers are increasingly exposed to tailored marketing messages that influence their awareness, attitudes, preferences, and purchase intentions. The growing adoption of social media has made algorithm-driven marketing an essential strategy for businesses seeking to improve customer engagement, strengthen brand loyalty, and enhance overall marketing effectiveness. The impact of social media algorithms extends



beyond personalized advertising by shaping consumer trust, online engagement, impulse buying, electronic word-of-mouth (eWOM), and long-term brand relationships. Consumers are more likely to engage with brands and products that frequently appear in their personalized feeds, making algorithms a powerful determinant of consumer behaviour in the digital marketplace. However, concerns regarding data privacy, algorithmic transparency, and excessive personalization have also emerged, creating challenges for marketers and policymakers. Despite the widespread use of social media algorithms, empirical research examining their influence on consumer behaviour, particularly in the Indian context, remains limited. Therefore, the present study, "A Study on the Impact of Social Media Algorithms on Consumer Behaviour," aims to examine how algorithm-driven content, personalized recommendations, and targeted marketing influence consumer perceptions, engagement, and purchasing decisions, thereby providing valuable insights for businesses to develop more effective and consumer-centric digital marketing strategies.

2. REVIEW OF LITERATURE

1. De Vries, Gensler, and Leeflang (2012) examined the effectiveness of brand posts on social media and their influence on consumer engagement. The study analysed brand communications on Facebook and found that vivid and interactive content significantly increased consumer likes, comments, and shares. The authors concluded that social media algorithms tend to promote highly engaging content, thereby increasing brand visibility and positively influencing consumer attitudes and purchasing intentions. The study emphasized that engaging social media content enhances consumer-brand relationships and marketing effectiveness.

2. Voorveld, van Noort, Muntinga, and Bronner (2018) investigated the role of social media platform usage in shaping consumer engagement with brands. Using survey data collected from users of multiple social networking platforms, the study found that platform-specific interactions and personalized content significantly influence brand perception, customer engagement, and purchase intentions. The findings highlighted that algorithm-driven personalization improves consumer experience by delivering relevant content based on users' interests and online behaviour.

3. Dwivedi, Ismagilova, Hughes, Carlson, Filieri, Jacobson, Jain, Karjaluoto, Kefi, Krishen, Kumar, Rahman, Raman, Rauschnabel, Rowley, Salo, Tran, and Wang (2021) reviewed the evolution of social media marketing and its influence on consumer behaviour. The study reported that artificial intelligence, social media algorithms, influencer marketing, and personalized advertising have become major determinants of consumer engagement and purchase decisions. The authors concluded that businesses adopting data-driven social media marketing strategies achieve higher customer satisfaction, stronger brand loyalty, and improved marketing performance.

4. Nuseir (2020) examined the impact of social media marketing activities on consumer buying behaviour in the digital environment. The study found that personalized advertisements, online reviews, electronic word-of-mouth (eWOM), and social media interactions significantly influence consumers' purchase intentions and brand trust. The research concluded that social media algorithms play a vital role in delivering personalized marketing messages that enhance consumer engagement and positively affect purchasing behaviour.

3. STATEMENT OF THE PROBLEM

The rapid growth of social media platforms has significantly transformed consumer purchasing behaviour in Thoothukudi District, where increasing internet penetration and smartphone usage have encouraged consumers to rely on platforms such as Instagram, Facebook, YouTube, and WhatsApp for product information, reviews, and purchase recommendations. Social media algorithms continuously analyse users' browsing behaviour, interests, and online interactions to provide personalized advertisements, influencer content, and product suggestions. While these algorithm-driven recommendations enhance consumer convenience and improve product discovery, they also influence purchasing decisions, brand preferences, impulse buying behaviour, and online engagement. However, the extent to which these algorithms affect consumers in Thoothukudi remains largely unexplored. Although businesses are increasingly adopting social media marketing strategies, there is limited empirical evidence regarding the impact of social media algorithms on consumer behaviour in Thoothukudi District. Consumers differ in their digital literacy, demographic characteristics, social media usage patterns, and awareness of algorithm-driven personalization, which may influence their trust, engagement, and purchasing decisions. Furthermore, concerns related to privacy, data security, excessive personalization, and misleading recommendations have raised questions about the effectiveness and ethical implications of algorithm-based marketing. Therefore, the present study, "A Study on the Impact of Social Media Algorithms on Consumer Behaviour in Thoothukudi District," seeks to examine how social media algorithms influence consumer awareness, attitudes, engagement, purchase intentions, and buying behaviour. The findings are

expected to provide valuable insights for marketers, businesses, and policymakers in developing effective, ethical, and consumer-oriented social media marketing strategies in the region.

4. RESEARCH OBJECTIVES

1. To examine the influence of social media algorithms on consumer purchasing behaviour in Thoothukudi District.
2. To identify the impact of personalized content, targeted advertisements, and product recommendations on consumers' purchase decisions.
3. To analyse the relationship between social media algorithm-driven engagement and consumer trust, brand perception, and buying behaviour.
4. To assess the influence of demographic factors on consumers' perceptions of social media algorithms and their purchasing behaviour in Thoothukudi District.

5. SCOPE OF THE STUDY

The present study focuses on examining the **impact of social media algorithms on consumer behaviour in Thoothukudi District**. It investigates how algorithm-driven features such as personalized content, targeted advertisements, product recommendations, influencer marketing, and content ranking influence consumers' purchasing decisions, brand perception, trust, and online engagement. The study is confined to consumers who actively use social media platforms such as Instagram, Facebook, YouTube, WhatsApp, and X (formerly Twitter) for information search, product discovery, and online shopping.

The study also examines the influence of demographic variables, including age, gender, educational qualification, occupation, income, and area of residence, on consumers' perceptions of social media algorithms. The findings are expected to provide valuable insights for marketers, business organizations, digital advertisers, and policymakers in developing effective and consumer-oriented social media marketing strategies. Furthermore, the study contributes to the existing literature by providing empirical evidence on algorithm-driven consumer behaviour in the context of Thoothukudi District, thereby serving as a useful reference for future academic research in digital marketing and consumer behaviour.

6. NULL HYPOTHESIS

H01: There is no significant relationship between age of the respondents and Social Media Algorithms and Consumer Behaviour

H02: There is no significant relationship between gender of the respondents and purchasing behaviour

H03: There is no significant relationship between Occupation of the respondents and product recommendations on purchase decisions

7. METHODOLOGY

The present study adopted a descriptive research design to examine the impact of social media algorithms on consumer behaviour in Thoothukudi District. The study was based on primary data collected from respondents through a structured questionnaire using a five-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” The respondents were selected using a convenience sampling method, and a total of 130 respondents who actively use social media platforms such as Instagram, Facebook, YouTube, WhatsApp, and X were included in the study. The questionnaire covered dimensions such as social media algorithm influence on consumer behaviour, purchasing decisions, personalized content, product recommendations, brand engagement, and trust. The collected data were analysed using statistical tools including Percentage Analysis, One-Way ANOVA, Independent Sample t-test, and Kruskal-Wallis Test to examine the relationship between demographic variables and consumer responses towards social media algorithms. The findings were interpreted to identify the extent to which algorithm-driven social media marketing influences consumer awareness, preferences, and purchasing behaviour in Thoothukudi District.

Analysis and interpretation

H01: There is no significant relationship between age of the respondents and Social Media Algorithms and Consumer Behaviour

ANOVA

Factors		Sum of Squares	df	Mean Square	F	Sig.
Social media algorithms influence my purchasing decisions.	Between Groups	7.499	4	1.875	2.813	.028
	Within Groups	83.308	125	.666		
	Total	90.808	129			
I often buy products that appear frequently on my social media feeds.	Between Groups	9.135	4	2.284	2.891	.025
	Within Groups	98.742	125	.790		
	Total	107.877	129			
Algorithm-based content affects my interest in new products.	Between Groups	3.265	4	.816	.919	.455
	Within Groups	110.958	125	.888		
	Total	114.223	129			
I trust products that are repeatedly recommended by social media platforms.	Between Groups	.669	4	.167	.139	.968
	Within Groups	150.723	125	1.206		
	Total	151.392	129			
Social media algorithms encourage me to explore new brands.	Between Groups	2.308	4	.577	.552	.698
	Within Groups	130.684	125	1.045		
	Total	132.992	129			

Source: Primary Data

Interpretation - The One-Way ANOVA test was conducted to examine the significant relationship between the age of the respondents and Social Media Algorithms and Consumer Behaviour. The results reveal that the factors “Social media algorithms influence my purchasing decisions” (Sig. = 0.028) and “I often buy products that appear frequently on my social media feeds” (Sig. = 0.025) have significance values less than 0.05, indicating significant differences among respondents of different age groups. Hence, the null hypothesis is rejected for these two factors. However, the remaining factors, namely “Algorithm-based content affects my interest in new products” (Sig. = 0.455), “I trust products that are repeatedly recommended by social media platforms” (Sig. = 0.968), and “Social media algorithms encourage me to explore new brands” (Sig. = 0.698), have significance values greater than 0.05, indicating no significant differences among age groups. Therefore, the null hypothesis (H01) is partially rejected and partially accepted, suggesting that age significantly influences consumers' purchasing decisions and buying behaviour related to frequently displayed social media content, while it does not significantly influence their perceptions of algorithm-based product interest, trust in repeated recommendations, or exploration of new brands.

H02: There is no significant relationship between gender of the respondents and purchasing behaviour

Factors		F	Sig.	t	df	Sig. (2-tailed)
Frequently appearing brands seem more trustworthy to me.	Equal variances assumed	.207	.650	-1.281	128	.202
	Equal variances not assumed			-1.273	119.901	.205
Social media algorithms improve my awareness of brands.	Equal variances assumed	2.320	.130	-.800	128	.425
	Equal variances not assumed			-.795	120.011	.428
I am more likely to engage with brands recommended by social media.	Equal variances assumed	.116	.734	-.774	128	.440
	Equal variances not assumed			-.770	122.775	.443
Equal variances assumed		.568	.453	.395	128	.693

Positive comments and reviews shown by algorithms increase my trust in products.	Equal variances not assumed			.395	127.021	.694
Algorithm-driven content strengthens my loyalty towards certain brands.	Equal variances assumed	5.737	.018	-.967	128	.335
	Equal variances not assumed			-.963	123.404	.337
Social media algorithms accurately understand my preferences.	Equal variances assumed	.595	.442	-1.421	128	.158
	Equal variances not assumed			-1.426	127.475	.156
I am comfortable receiving personalized product recommendations.	Equal variances assumed	.390	.533	.052	128	.959
	Equal variances not assumed			.052	127.113	.959
I am concerned about my privacy when social media platforms personalize content.	Equal variances assumed	.003	.957	.158	128	.875
	Equal variances not assumed			.158	127.223	.875
Social media algorithms make online shopping easier and more convenient.	Equal variances assumed	.006	.937	1.597	128	.113
	Equal variances not assumed			1.594	126.452	.113
Overall, social media algorithms positively influence my consumer behaviour.	Equal variances assumed	2.473	.118	-1.150	128	.252
	Equal variances not assumed			-1.147	125.382	.254

Source: Primary Data

Interpretation - The Independent Sample t-test was applied to examine the significant relationship between the gender of the respondents and purchasing behaviour. The results indicate that all the factors, including “Frequently appearing brands seem more trustworthy to me” (Sig. = 0.202), “Social media algorithms improve my awareness of brands” (Sig. = 0.425), “I am more likely to engage with brands recommended by social media” (Sig. = 0.440), “Positive comments and reviews shown by algorithms increase my trust in products” (Sig. = 0.693), “Algorithm-driven content strengthens my loyalty towards certain brands” (Sig. = 0.335), “Social media algorithms accurately understand my preferences” (Sig. = 0.158), “I am comfortable receiving personalized product recommendations” (Sig. = 0.959), “I am concerned about my privacy when social media platforms personalize content” (Sig. = 0.875), “Social media algorithms make online shopping easier and more convenient” (Sig. = 0.113), and “Overall, social media algorithms positively influence my consumer behaviour” (Sig. = 0.252) have significance values greater than 0.05. Hence, the null hypothesis is accepted for all the factors, indicating that there is no significant difference between male and female respondents regarding their purchasing behaviour influenced by social media algorithms. Therefore, the null hypothesis (H02) is accepted, suggesting that gender does not significantly influence consumers' perceptions or purchasing behaviour related to social media algorithms.

H03: There is no significant relationship between Occupation of the respondents and product recommendations on purchase decisions

Kruskal Wallis Test					
Factors	Personalized advertisements match my interests and preferences.	Targeted advertisements influence my buying decisions.	Product recommendations on social media encourage me to purchase products.	Influencer recommendations affect my purchase intentions.	Discounts and promotional offers suggested by algorithms increase my likelihood of purchasing.
Kruskal-Wallis H	4.149	1.603	3.614	.795	2.088

df	4	4	4	4	4
Asymp. Sig.	.386	.808	.461	.939	.720

Source: Primary Data

Interpretation - The Kruskal-Wallis test was applied to examine the significant relationship between the occupation of the respondents and product recommendations on purchase decisions. The results indicate that all the factors, including “Personalized advertisements match my interests and preferences” (Asymp. Sig. = 0.386), “Targeted advertisements influence my buying decisions” (Asymp. Sig. = 0.808), “Product recommendations on social media encourage me to purchase products” (Asymp. Sig. = 0.461), “Influencer recommendations affect my purchase intentions” (Asymp. Sig. = 0.939), and “Discounts and promotional offers suggested by algorithms increase my likelihood of purchasing” (Asymp. Sig. = 0.720) have significance values greater than 0.05. Hence, the null hypothesis is accepted for all the factors, indicating that there is no significant difference among respondents belonging to different occupational groups regarding the influence of personalized advertisements, targeted advertisements, product recommendations, influencer recommendations, and algorithm-based promotional offers on their purchase decisions. Therefore, the null hypothesis (H03) is accepted, suggesting that occupation does not significantly influence consumers’ responses towards social media-based product recommendations and their purchasing behaviour.

8. Conclusion

The present study, “A Study on the Impact of Social Media Algorithms on Consumer Behaviour in Thoothukudi District,” examined the influence of algorithm-driven social media features on consumers’ purchasing decisions, brand engagement, trust, and online behaviour. Social media algorithms have transformed the digital marketing environment by providing personalized content, targeted advertisements, and product recommendations based on users’ interests, preferences, and online activities. The study revealed that social media algorithms significantly influence certain aspects of consumer purchasing behaviour, particularly the impact of frequently displayed products and algorithm-based content on purchase decisions among different age groups. However, gender and occupation were not found to create significant differences in consumers’ perceptions and responses towards algorithm-driven marketing activities. The findings indicate that consumers increasingly depend on social media platforms for product discovery, brand awareness, and purchase-related information. Age plays an important role in determining the influence of social media algorithms on purchasing decisions, while gender differences do not significantly affect algorithm-based consumer behaviour. Similarly, occupational differences do not significantly influence consumers’ responses towards personalized advertisements, targeted marketing, influencer recommendations, and algorithm-based promotional offers. The study highlights that businesses can effectively utilize social media algorithms to deliver relevant content, improve customer engagement, and strengthen brand relationships. At the same time, marketers should consider ethical concerns related to consumer privacy, transparency, and responsible use of personal data while implementing algorithm-based strategies. The study provides valuable insights for businesses, digital marketers, and policymakers in Thoothukudi District to develop consumer-centric social media marketing approaches. Overall, social media algorithms have become an important factor shaping modern consumer behaviour, and effective utilization of these technologies can enhance marketing effectiveness, customer satisfaction, and long-term brand loyalty. Further research may explore the role of artificial intelligence, algorithmic transparency, privacy concerns, and emerging social commerce trends in influencing consumer decisions.

References

1. De Vries, L., Gensler, S., & Leeftang, P. S. H. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, 26(2), 83–91.
2. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168.
3. S. Gajula, "Intelligent Customer Churn Analytics in Digital Banking Using Advanced Machine Learning Models," 2025 1st International Conference on Emerging Trends in Information Systems and Informatics (ICETISI), Jakarta, Indonesia, 2025, pp. 1-6, doi: 10.1109/ICETISI67983.2025.11406030.
4. Voorveld, H. A. M., van Noort, G., Muntinga, D. G., & Bronner, F. (2018). Engagement with social media and social media advertising: The differentiating role of platform type. *Journal of Advertising*, 47(1), 38–54.
5. Sunkara, S. P. (2025). Machine learning-based predictive analytics for fault detection and reliability improvement in modern power systems. *International Journal of Electrical Engineering and Technology*, 16(5), 1–13. https://doi.org/10.34218/IJEET_16_05_001.

6. Boerman, S. C. (2020). The effects of the General Data Protection Regulation on personalized advertising: A literature review. *Current Opinion in Psychology*, 31, 91–96. <https://doi.org/10.1016/j.copsyc.2019.07.030>
7. De Vries, L., Gensler, S., & Leeﬂang, P. S. H. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, 26(2), 83–91.
8. S. K. Ramareddy, "Integrating AI-Driven Data Visualization and Data Warehouse Analytics for Predictive Decision-Making in Financial and Stock Market Systems," 2026 International Symposium of Systems, Advanced Technologies and Knowledge (ISSATK), Hammamet, Tunisia, 2026, pp. 1-6, doi: 10.1109/ISSATK69667.2026.11566934.
9. Jacobson, J., Gruz, A., & Hernández-García, Á. (2020). Social media marketing: Who is watching the watchers? *Journal of Retailing and Consumer Services*, 53, 101774.