



IMPACT OF SOCIAL MEDIA

ALGORITHMS ON USER BEHAVIOURS

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Abstract:

Social media platforms have become central to modern communication, entertainment, commerce, and political discourse. At the heart of these platforms lie sophisticated algorithms that determine what content users see, in what order, and with what frequency. These algorithms analyse massive volumes of user data to personalize feeds, recommend content, and optimize engagement. This study examines the impact of social media algorithms on user behaviour, focusing on psychological, social, and behavioural outcomes. Using secondary data sourced from academic journals, industry reports, and credible publications, the research explores how algorithmic personalization influences attention span, emotional responses, opinion formation, consumer behaviour, and social interaction. The study identifies both positive effects, such as improved content relevance and community building, and negative consequences, including addiction, misinformation, polarization, and mental health concerns. The study provides a comprehensive understanding of algorithmic influence and emphasizes the importance of ethical design, transparency, and digital literacy in ensuring responsible social media use in contemporary society

Keywords: Social Media Algorithms, User Behaviour, Digital Literacy, Algorithmic Personalization.

Introduction

The rapid growth of social media platforms such as Facebook, Instagram, YouTube, X (Twitter), and TikTok has transformed the way individuals communicate, consume information, and form opinions. Over the past decade, social media usage has increased exponentially, with billions of users spending several hours daily on these platforms. At the core of this digital ecosystem are social media algorithms—complex systems based on artificial intelligence and machine learning that curate, rank, and recommend content to users.

These algorithms analyse vast amounts of user data, including likes, shares, comments, watch time, browsing history, location, and interaction patterns. Based on this data, platforms predict user preferences and deliver

personalized content feeds. While this personalization improves convenience and user satisfaction, it also significantly shapes user behaviour, often without the user's conscious awareness.

Algorithms influence not only what content users see but also how they perceive reality, form opinions, and interact socially. Repeated exposure to similar content can reinforce beliefs, alter emotional states, and affect attention span. Over time, this can lead to behavioural changes such as increased dependency on social media, reduced offline interaction, and heightened emotional sensitivity.

Literature review

Social media algorithms strongly influence user behaviour by continuously showing content that matches users' interests, emotions, and online activities. According to the Uses and Gratifications Theory, people use media to satisfy needs such as entertainment, information, and social interaction. Algorithms strengthen this process by personalizing content so that users remain engaged for longer periods. Another important explanation comes from Social Learning Theory, which states that individuals learn behaviours by observing others. When users repeatedly see trending opinions, lifestyles, or behaviours on social media, these patterns gradually become normalized, especially among adolescents and young adults.

The attention economy plays a major role in this system because social media platforms generate revenue through advertising and therefore aim to maximize user attention. Algorithms often promote content that triggers strong emotions like anger, excitement, or fear because such content keeps users engaged for longer. Over time, constant exposure to algorithm-driven content can influence communication styles, social norms, and cultural values.

Research methodology

This study adopts a descriptive and analytical approach and uses both primary (survey) and secondary (literature) data. The research design is non-experimental and exploratory, aiming to analyse existing knowledge and identify patterns related to the influence of social media algorithms on user behaviour.

A systematic literature review method was employed to collect relevant studies. Academic databases such as Google Scholar, JSTOR, and ResearchGate were consulted to obtain peer-reviewed articles, while reports from technology research organizations and policy institutions were reviewed to understand practical implications.

The selected literature was screened based on relevance to the research objectives, publication credibility, and methodological quality. After selection, the data was organized into thematic categories including engagement patterns, psychological impact, social influence, political effects, and ethical concerns.

Scope of study

This study examines how social media algorithms influence user behaviour from social, psychological, and cognitive perspectives. It focuses on major social media platforms and studies their general impact on users rather than limiting the research to a particular region or age group. However, special attention is given to young adults, as they represent one of the most active groups using social media platforms.

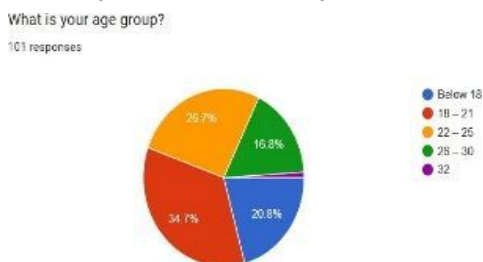
The research does not analyse the technical structure or programming of algorithms. Instead, it focuses on how algorithm-based systems affect user behaviour and social interactions.

The study relies entirely on secondary data sources such as academic journals, research papers, reports, and online publications. Secondary data was selected because it provides reliable information and allows the study to use findings from existing research on social media algorithms and user behaviour.

Data analysis

Age group analysis

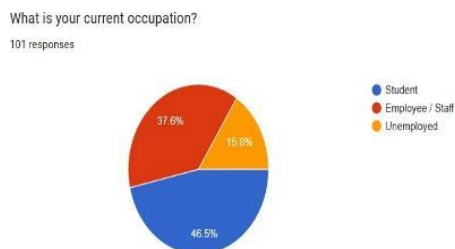
The age distribution shows that most respondents are between 18–21 years (34.7%), followed by 22–25 years (26.7%). About 20.8% are below 18, while 16.8% belong to the 26–30 age group, and only a few are above 30. This indicates that young people form the majority of social media users in the survey. Since younger individuals spend more time online, they are more likely to be influenced by social media algorithms.



Occupation analysis

The occupation data shows that 46.5% of respondents are students, 37.6% are employees, and 15.8% are unemployed.

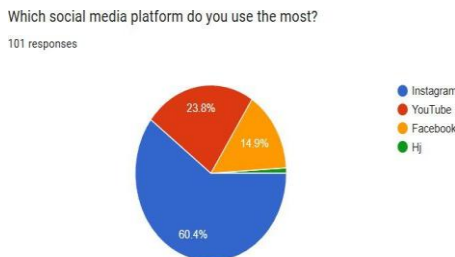
Students represent the largest group in the study. Because students frequently use social media for communication, learning, and entertainment, they are more likely to experience the effects of algorithm-based content.



Social media platform usage analysis

The data indicates that Instagram is the most used platform (60.4%), followed by YouTube (23.8%) and Facebook (14.9%). Only a small number of respondents use other platforms.

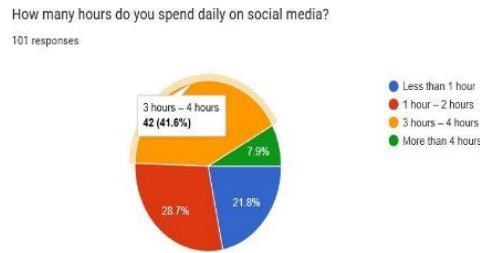
Since Instagram and YouTube rely heavily on recommendation algorithms, these platforms strongly influence the type of content users see and how long they remain engaged online.



Daily time spent on social media

The results show that 41.6% of respondents spend 3–4 hours daily on social media, while 28.7% spend 1–2 hours. A smaller number spend either less than one hour or more than four hours.

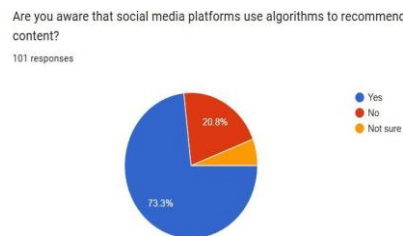
This indicates high user engagement. Continuous personalized recommendations from algorithms encourage users to spend more time on these platforms.



Awareness of social media algorithms

According to the survey, 73.3% of respondents are aware that social media platforms use algorithms to recommend content. Around 20.8% are unaware, and a few are uncertain.

This suggests that most users understand the role of algorithms, but some still lack knowledge about how these systems control the content they see.



Recommended content and user interests

The data shows that 40.6% of respondents agree and 35.6% strongly agree that recommended content usually matches their interests. Only a small number remain neutral or disagree.

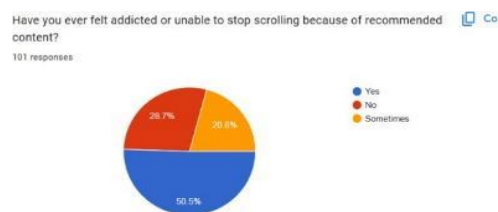
This indicates that social media algorithms effectively personalize content based on user preferences, increasing engagement.



Addiction due to recommended content

The findings reveal that 50.5% of respondents feel addicted to scrolling, 20.8% experience this sometimes, and 28.7% do not feel addicted.

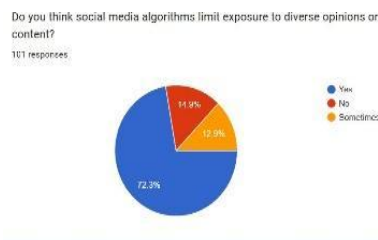
This suggests that constant recommendations of engaging content can lead to excessive usage and scrolling behaviour.



Limitation of diverse opinions by algorithms

About 72.3% of respondents believe that algorithms limit exposure to different opinions, while 12.9% say this happens sometimes and 14.9% disagree.

This indicates that algorithms often show content based on users' interests, which may reduce exposure to diverse viewpoints



Impact on consumer behaviour

Social media algorithms have a significant influence on consumer behaviour by shaping what users see on their feeds. These algorithms analyse user activities such as searches, likes, shares, watch time, and browsing patterns to recommend products, advertisements, and services that match individual interests. Because of this personalization, users are repeatedly exposed to similar products or brands, which increases familiarity and encourages them to consider purchasing those items.

Frequent exposure to personalized advertisements can also lead to impulse buying behaviour. When users continuously see the same product through sponsored posts, influencer promotions, or recommended videos, they may feel a stronger desire to purchase it even without planning to do so. Algorithms are designed to highlight trending products and popular content, which can create a sense of urgency or social influence that motivates users to make quick purchasing decisions.

Another important impact is related to trust in algorithm-recommended information. Many users tend to believe that the content suggested by platforms is reliable or relevant to their needs. As a result, they may rely more on recommended reviews, product suggestions, or sponsored content rather than conducting their own research. In some cases, this may increase the chances of encountering misleading advertisements or inaccurate information. Social media algorithms also influence how individuals present themselves online. Users often modify their posts, images, or videos in ways that they believe will receive more engagement from the platform's algorithm

Hypothesis testing

- H0: Social media algorithms do not significantly influence user behaviour.
- H1: Social media algorithms significantly influence user behaviour.

The primary hypothesis proposes that algorithm-based personalization on social media platforms significantly enhances user engagement and psychological reliance, which subsequently mediates the effect of social media exposure on behavioural outcomes such as addictive usage, opinion shaping, and consumer decision-making. The findings of this study largely support the proposed hypothesis, with slight variations in specific areas.

The first relationship—personalized algorithms increasing user engagement—is clearly validated. The data shows that users spend a considerable amount of time on social media platforms, primarily because the content presented closely matches their preferences and interests. This continuous alignment encourages prolonged interaction and repeated platform usage.

The second relationship—high engagement leading to addictive behaviour—is also supported. Many respondents reported experiencing compulsive scrolling habits. The constant stream of engaging and emotionally appealing content keeps users involved for longer durations, making it difficult for them to disconnect from the platform.

The third relationship—algorithmic filtering influencing opinions and reducing exposure to diverse perspectives—is confirmed. The majority of users believe that they are repeatedly exposed to similar types of content, which limits their access to different viewpoints. This indicates that algorithms can shape users' perceptions and reinforce existing beliefs over time.

The fourth relationship—personalized recommendations affecting consumer behaviour—is partially supported. While repeated exposure to advertisements and recommended products increases users' interest and likelihood of impulsive purchases, buying decisions are not entirely dependent on algorithms. External factors such as personal needs, financial conditions, and individual preferences also play an important role.

The fifth observation—awareness of algorithms not significantly reducing their impact—is validated. Even though most users are aware that algorithms control their content feed, this awareness does not significantly change their behaviour. Users continue to engage with recommended content, highlighting a gap between knowledge and actual behavioural control.

Overall, the findings outline a clear sequence of influence: algorithmic personalization → increased attention and engagement → psychological effects such as dependency → behavioural outcomes including excessive usage, opinion formation, and purchasing behaviour. This confirms that social media algorithms have a strong and multidimensional impact on user behaviour.

Conclusion

The findings of this study show that social media algorithms play an important role in shaping user behaviour. The data analysis indicates that most respondents are young individuals, especially students, who spend several hours daily on platforms such as Instagram and YouTube. Because these platforms rely heavily on recommendation algorithms, users are continuously exposed to personalized content that matches their interests. This personalization increases user engagement and keeps people active on social media for longer periods.

The results also reveal that many users recognize that algorithms control the content displayed on their feeds. At the same time, a large number of respondents reported experiencing addictive scrolling behaviour due to continuous recommendations. The study also shows that algorithms often display similar types of content repeatedly, which may limit users' exposure to different opinions and perspectives.

In addition to influencing content consumption, social media algorithms also affect decision-making and consumer behaviour. Personalized advertisements and repeated product recommendations can encourage users to make impulsive purchases. Algorithms may also influence how users present themselves online, as many individuals adapt their content to gain more visibility and engagement on these platforms.

Overall, the study highlights that the impact of social media algorithms is both significant and complex. While algorithms improve user experience by delivering relevant content and supporting communication and learning, they can also lead to excessive usage and reduced diversity of information. Therefore, improving digital literacy, increasing transparency in algorithm design, and promoting responsible use of technology are important steps to ensure that social media platforms benefit users while minimizing negative effects.

Future scope of study

Future studies can further examine the impact of social media algorithms by collecting primary data through surveys, interviews, and experiments. Researchers may also conduct comparative studies across different countries, cultures, and age groups to better understand how algorithmic systems influence users in different social environments. In addition, future research could explore ethical AI development, transparency in recommendation systems, and government regulations aimed at ensuring responsible use of algorithm-driven technologies.

Social media algorithms have become a major factor in shaping how people interact with digital platforms. This study highlights that algorithm-based personalization increases user engagement and improves platform efficiency by recommending relevant content. However, it also raises concerns related to addictive usage patterns, misinformation, online polarization, and mental health effects. When algorithms repeatedly show content that aligns with users' interests and beliefs, they may reduce exposure to diverse perspectives and limit critical thinking.

At the same time, algorithmic systems offer several advantages. They help users discover relevant information, connect with communities, and access personalized learning resources. Therefore, the influence of social media algorithms is both beneficial and challenging. To ensure positive outcomes, it is important to promote ethical algorithm design, transparency in digital platforms, and stronger digital literacy among users.

In the future, collaboration between policymakers, educators, technology developers, and researchers will be essential to balance technological innovation with social responsibility. Such efforts can help create a healthier and more informed digital environment for society.

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