

Navigating TikToks Algorithmic Landscape and Its Impact on Consumer Experience

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Introduction:

The platform TikTok dominates the realm of social media, captivating audiences globally with its viral content and trends. The motivations and behaviors of individuals influence the user experience of the app. “Due to the opaque nature of algorithms, users experience them through their perceptions as they interact with them.” (Ionescu, 2023 para. 5) This algorithm can instigate positive experiences promoting well-being while at the same time initiating cognitive biases and radicalization, inducing the “echo-chamber” effect and leading to poor outcomes. (Ionescu, 2023, para. 1)

The purpose of this paper is to explore TikTok’s usage of algorithms and the effects this algorithm can have on consumers. The outcomes of a personally generated feed can be controversial among young users. TikTok has over one billion users worldwide and represents a cultural phenomenon in the world of social media. (Schellewald, 2023) People are drawn to this app for a reason, with opinions on why they enjoy it. However, whether possible detrimental effects outweigh these desired benefits is a highly discussed topic. The significance of this subject is vital due to our limited understanding of it. Our judgments about positive and negative effects are speculative given this application’s recent widespread popularity. Many claims lack substantial research.

Literature Review:

Algorithms play a crucial role in user experience through all social media platforms. “Algorithms are generally invisible mechanisms within social-technical systems that can influence how we perceive online and offline reality and interact with each other. (Klug et al., p. 85) Algorithm awareness is a term that represents the level of knowledge users have about algorithm systems (Issar, 2023). For the most part, users are aware that an algorithm is present.

However, the way people prefer to understand algorithms and dynamically interact with them is known as “Algorithmic Imaginary” (Issar, 2023). This explains the way people encounter “invisible” algorithms every day. “It is synonymous with the view that algorithms can be thought of as cultural artifacts; discourse about these experiences forces these algorithms to become tangible and perceptible in the vernacular.” (Issar, 2023, p. 1) Algorithm awareness has been named an essential skill of the internet (Issar, 2023).

The AI algorithm TikTok utilizes suggests content similar to users’ preferences. This recommendation cultivates engagement for an extended time. New videos are first shown to a smaller group of users likely to interact. If the initial group interacts with the video, it will be shown to more users. (Klug et al., 2021) Collaborative filtering and matrix factorization are both incorporated into TikTok’s algorithm. Collaborative filtering detects user behavior to group customers with similar interests (Klug et al., 2021). Matrix factorization singles out clusters of similar users and matches them with clusters of content (Klug et al., 2021). These strategies feed off each other to generate an environment conducive to the development of addiction (Klug et al., 2021).

Chained to the Algorithmic Abyss

TikTok has thoughtfully crafted the ins and outs of its app. “Unique features like Infinite scrolling, autoplay, video recommendation, sharing, platform to earn digital currency, and audio-video editing might make users addicted.” (Pathak, 2021, p. 46) These components increase the lack of self-discipline users exercise while utilizing the application (Qin et al., 2022). Positive consequences from this include creativity, popularity, connection, and economic benefit, whereas negative consequences can include trauma, false information, unethical content, and cyberbullying (Pathak, 2021).

Although many users are cognizant of the presence of TikTok algorithms and observe the effects on their feeds while scrolling, many lack an understanding of its functioning and potential influence (Wang, 2023). The entertainment these social media platforms provide leads to a loss of desire to acknowledge a consideration users may not like. This is known as a filter bubble, as defined by cyber-activist Pariser in 2011. (Wang, 2023) A filter bubble illustrates “how people live in a universe of personalized information that matches their own preferences and tastes and are trapped in this state of intellectual isolation.” (Wang, 2023, p. 3)

TikTok utilizes “The Hook Model” to increase engagement and dependency within the app (Eyal, 2023). “The Hooked Model is a way of describing a user’s interactions with a product as they pass through four phases: a trigger to begin using the product, an action to satisfy the trigger, a variable reward for the action, and some type of investment that, ultimately, makes the product more valuable to the user.” (Eyal, 2023 p. 3) The user forms habits as they go through each phase. Infinite scroll is one feature that represents a trigger. The ability to scroll forever raises engagement levels by showing unlimited feeds. This engages users and increases time spent on the app (Pathak, 2021). The action represented by the triggers is mainly the scrolling and engaging on the app. Whether users receive likes/comments/views as a creator or watch a constantly evolving feed, TikTok provides ample forms of reward. Investment within TikTok includes your personal profile, creating content, sharing through DM or other platforms, saving sounds or videos, and following accounts. This is the stage that personalizes the app, therefore leading to investment.

Navigating the Highs and Lows

Investigating whether the negatives outweigh the positives makes navigating this topic challenging. Social media can alter the mental state of users. (Pathak, 2021) Evidence to suggest

if the alteration is positive or negative varies. The positive and negative effects of social media depend on the nature of the individual. (Pathak, 2021) “TikTok enables users to capture memorable moments and create short-form videos to record their lives.” (Qin et al., 2022, p. 2) The algorithms of TikTok can cultivate social connection, encourage relationships, and appear beneficial in online contexts, considering visibility and social power (Klug et al., 2021). Andreas Schellewald mentions that the “distraction afforded by digital media can be both wanted and unwanted.” (Schellewald, 2023, p. 22)

Segueing into examining what concerns merit consideration, Pathak analyzed 36 studies to conclude that AI algorithms might negatively affect the mental health of young users (Pathak, 2021). These effects come in the form of anxiety, depression, and self-esteem issues (Pathak, 2021). “The reasons behind those problems are body image dissatisfaction, cyberbullying, fear of missing out, stranger danger, social isolation, social comparison, and being disconnected from social media.” (Pathak, 2021, p. ii) Given the algorithms TikTok uses and its connection to addiction around social media, users feel a connection with the app and their curated feed. Putting your phone down brings about emotional distress as users fear being disconnected and unsure of what they might miss out on (Pathak, 2021).

On the other hand, social comparison with users’ content can affect self-esteem. Specifically, “problems of social comparison in the form of body image, talent, followers, subscribers, and so on can be seen among the youth users who get easily influenced by the contents.” (Pathak, 2021, p. 71) Much of what users see on TikTok fosters unrealistic expectations when analyzing one’s looks, abilities, and worth. Given that this is an app where you can choose when you get to post and what you get to post, people curate perfection within a lot of what is posted. Obsessing over these people, you view as “perfect” adjusts your algorithm

to continue to put aligning content on your feed. Although you may not be consciously aware of what is happening, users still experience the effects. “It was found that both pre-adolescents and adolescents who are consuming TikTok for identity-creation, social networking, fame-seeking, talent presentation, and entertainment are not aware of the negative impacts of using TikTok.” (Pathak, p. 63)

TikToks News Wave

The presence of an algorithm within TikTok communities resulted in the replication of behaviors through recurrent patterns observed on the app. With the COVID-19 pandemic playing a crucial role in people’s lives everywhere, the facts and biases are in jeopardy with the influence of a mainstream app (Michell, 2023). In 2020, the pandemic affected the lives of millions. The entire world was put on pause. The timing of the pandemic coincided with the rise of the recently developed app introduced in 2016, significantly impacting consumers' lives. The app exhibited videos on pandemic health and became an active outlet for consumers to locate information regarding COVID-19. The viral trend of using a burnt orange to regain smell after testing positive for COVID-19 gained widespread attention (Michell, 2023). The numbers skyrocketed as TikTok consumed all media (Michell, 2023). “As of April 2021, the hashtag #covidtastetest had 28.1 million instances of use, while #covidsmelltest had over four million, and #smelltok, a hashtag that marks a general interest in smell, had 1.4 million” (Michell, 2023, p. 2). The media consumption and relevance of the platform became an integral aspect of a worldwide pandemic (Michell, 2023). Concepts and similarities formed through an algorithm, which were viewed by millions at a rapid pace, would have the potential to shape societal perceptions and influence how the entirety of the pandemic was handled (Michell, 2023).

The virality of TikTok has led to an influx of news progression through the media and how consumers receive information. With the pandemic in 2020 and 800 million users on the platform, the news surfacing from the app transformed how news is consumed (Brown, 2020; Comp et al., 2021).

The World Health Organization joined the platform to encourage citizens to get vaccinated and share information regarding the deadly pandemic. However, the difference in opinion of the vaccination and its messages evolved into its own movement. A user posted a video before she passed away from COVID-19, expressing her utter regret for not getting vaccinated and encouraging others to do it (Jin, 2023). Messages similar to this one pose questions about how users can be persuaded on different topics. "In addition, those who held more negative vaccine attitudes showed greater vaccine-related intentions after watching more serious videos. Especially, expectancy violation was a positive, significant predictor of message effectiveness and vaccine-related intentions among those who initially held more negative vaccine attitudes." (Oh et al., 2023, p. 617) The expectancy violation "is when communication behaviors of others deviate from what we expect from them in social situations." (Jin, 2023, p. 4) Users' attentions are shifted from an aroused feeling, leading them to feel the urge to do something, in this case, the act of getting informed and vaccinated.

With the rise of news information infiltrating TikTok's algorithm, the existence of misinformation increases. The idea of influencers using their platform to potentially spread misinformation poses many public concerns (Thompson, 2023). Influencers provide public health pedagogy, which is "designed to promote face-based, health-related knowledge outside of traditional educational settings[...]" (Thompson, 2023, p. 2). Influencers, or those with a large following, have the opportunity to report critical information regarding health risks. Influencers

can empower their audience to protect their peace and empowerment can be ‘through identification and evaluation of information relevant to health and well-being’ (Rowlands, 2012, p. 24). However, if the public figure is not empowered with proper and factual evidence to support their belief, misinformation can play a crucial part in how news is understood.

After thoroughly reviewing the literature surrounding TikTok's strategic implementation of algorithms and their impact on user experience, numerous factors foster consideration. This study aspires to contribute by proposing the following hypotheses: "If users interact with specific content often and repeatedly on TikTok, leading to a pattern in their content, then the algorithm may impact the users’ mental health. The second hypothesis states: "If you were on TikTok during the prime of the pandemic, then you were exposed to a skewed perception.”

Methodology

For this study, we propose a quantitative research study to determine how algorithms affect users.

Sampling selection:

We are using a stratified random sampling group consisting of the entire School of Journalism and Communication (1880 students) and the School of Business (3727 students) at the University of Oregon. The study population will be roughly 5000 students, but we expect our completed sample to be 2000 participants. We will randomly choose 1300 of each study from this sample to complete our research. Over our allotted time for this research, we will use Google Forms to generate our survey and poll. We will then use the SOJC and the Business school email to send our information and forms.

Operational Definitions

Because this survey will be sent out through email, response rates raise concerns. To increase response rates, we will offer incentives, including five-dollar gift cards upon completion and five-dollar gift cards if participants forward the email to a peer. Since incentives may attract participants who are not genuinely interested in the study, we will implement filter questions to eliminate bias and ensure the authenticity of responses.

The first hypothesis will be examined via survey administration. This survey will consist of short, close-ended questions regarding time spent on the application, content they may interact with, methods of interaction, and regularity of certain content. When writing these survey questions, we will refrain from leading questions that may persuade participants to answer in a certain way. The design of our questions is important regarding the Social Desirability Effect. Questions must come across as open-minded so that participants feel comfortable answering honestly. For this survey, we will use the responses to determine how the independent variable (the content users interact/see on their feeds) affects the dependent variable (the pattern in content).

The second hypothesis studies the use of the algorithm in the form of the news and how it can alter one's perception of events. We will administer a poll to mitigate potential discomfort, social desirability bias, or skewed responses. A poll allows a range of answers to alleviate any pressure or angst to conform to a specific answer. Because political agendas remain controversial, people sometimes conceal opinions. Therefore, confidentiality and anonymity will be crucial in framing the questions. For this poll, we will use the results to ensure that the independent variable (present on the application during the start of the pandemic in 2020) affects the dependent variable (being exposed to skewed, one-sided data).

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