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## ARTICLE

# How AI Algorithms Shape Cognition and Consumption: The Psychological Mechanisms and Economic Behaviors of Online Hate Speech

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## ABSTRACT

AI has become a popular approach for increasing communication frequency and advancing online marketing. This emerging technology has shaped cognitive conceptions and decision-making behaviors, as it has been utilized by an increasing number of the public, especially those who purchase items on various social media platforms. Meanwhile, those messages with aggressive and hateful speech were magnified and then influenced the psychological mechanism and the way they make an online purchase decision. This article is presented as a conceptual short communication that develops a behavioral-economics mechanism framework to explain how the algorithmic amplification of hate speech distorts young users' cognitive patterns, identity dynamics, and consumption behavior. Key mechanisms such as algorithmic filtering, cognitive-emotional bias, and identity-driven economic behavior have been identified. Based on this, this paper extracts three propositions to clarify the core mechanisms linking algorithmic hate speech and adolescent consumer behavior, and provides a comparative analysis using three representative social media platforms as case studies. This paper argues that the importance of this topic lies in its status as a crucial frontier across psychological perspectives, behavioral economics, and communication studies. By offering a structured perspective, this short communication highlights implications for platform governance, policymaking, and corporate risk management. This brief communication appeals to corresponding strategies for the governance of platforms, social policymakers, and companies to build a healthier, more rational, and sustainable digital economy.

**Keywords:** Algorithm AI; Hate Speech; Cognitive Patterns; Behavioral Economics; Consumption Decisions

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## 1. Introduction

Social media platforms have gained immense popularity, especially among the younger generation, transforming how people communicate and shop <sup>[1]</sup>. With the development of internet technology, AI-driven algorithms provide personalized services to online customers, recommending content that aligns with individual preferences and desires <sup>[2]</sup>. Big data algorithms are shaping the online environment for consumers, profoundly influencing public cognitive patterns and emotional responses <sup>[3]</sup>. While social media offers opportunities for self-expression and social interaction, it has also led to a surge in hateful and hostile online discourse <sup>[4]</sup>. Since negative news attracts more attention, triggering stronger emotional reactions and brain activity, it is detrimental to individual cognitive, emotional development, and behavior <sup>[5]</sup>. Exposure to a large amount of negative information often lowers one's evaluation of the target <sup>[6]</sup>. This is frequently caused by a negative bias, in which the brain associates negative information with danger, leading to a more lasting impact on emotions and decision-making <sup>[4]</sup>. This effect is amplified by big-data recommendation mechanisms, resulting in increased exposure to negative news among online users. While personalized customization reduces the time consumers spend searching for online products and information, the constant influx of hate speech recommendations can have devastating consequences, severely impacting consumer economic behavior <sup>[2]</sup>. For example, hate speech not only stigmatizes public discourse but also reduces consumer trust in society and increases risk perception. Changes in confidence in online shopping and brand evaluations will ultimately affect the macroeconomic policy environment.

Recommendation algorithms often focus on user interaction and engagement <sup>[7]</sup>. When recommending relevant content, algorithms may inadvertently increase the frequency of negative comments, unwittingly exploiting and amplifying public cognitive biases. Products and characteristics associated with hate speech led to unfavorable consumer evaluations and emotional drives, resulting in moral outrage and skepticism <sup>[8]</sup>. The systematic amplification of hate speech distorts public perception of the economic environment, not only affecting

consumer brand loyalty, consumption choices, and investment intentions but also posing significant challenges to policymaking from a financial perspective <sup>[9]</sup>. Research has discussed hate speech, consumer trust, and algorithm design separately. Still, a coherent account of how algorithmic curation, psychological mechanisms, identity dynamics, and youth consumption behavior interact remains underdeveloped. This paper fills this gap by proposing an integrated mechanism framework and three propositions that elucidate the causal path from algorithmic exposure to consumption distortions. By exploring how the recommendation logic of platform algorithms interacts with users' psychological mechanisms and how this interaction influences users' trust in online goods and their willingness to purchase, it provides key insights for digital platform governance policies and corporate reputation risk management. Furthermore, a comparative analysis of three major social media platforms provides practical applications for this conceptual framework and proposition detection.

## 2. Media, Psychology, and Behavioral Economics Perspectives

Social media platforms, through recommendation algorithms, provide opportunities and engines for the spread of online hate speech <sup>[4]</sup>. These algorithms shape online experiences through personalized content, increasing user engagement and guiding decision-making <sup>[1,2]</sup>. While this influence can improve user satisfaction, it also poses challenges, including the potential for information cocoons and user addiction <sup>[10]</sup>. Current research leaves gaps regarding the potential normalization of hate speech by adolescents during their critical cognitive development period. This short commentary argues that algorithmically amplified hate speech may distort public perception of society and exacerbate inter-group antagonism. For young social media online users, the changes and impacts on their risk perception, brand attitudes, and consumption choices urgently require further investigation <sup>[11]</sup>. Based on this, this paper proposes the core argument that algorithmically amplified hate speech not only involves content governance but also constructs public cognitive frameworks and influences emotional drives and identity.

The shaping of cognitive patterns is reflected in the repeated recommendation of specific information by algorithms and the macro-level framework they construct<sup>[12]</sup>. Agenda-setting theory explains the connection between algorithms and consumer cognition. Platform algorithms influence public perception of which projects and issues are essential or risky by setting the agenda<sup>[13]</sup>. Perceptions of projects and problems may include cognitions and attitudes towards specific products, businesses, companies, organizations, and brands. For example, an algorithm's recommendation against a highly recommended brand can quickly erode consumer trust in that brand and alter their purchasing decisions. This fully demonstrates the impact of online hate speech, when the audience receives negative information about an object, their perception of the product and purchasing behavior are misinformed and influenced<sup>[14]</sup>.

The information cocoon effect is another critical theoretical perspective that explains the generation and evolution of the online economic behavior of adolescent users. Exposure to and identification with information from a single perspective not only reinforces an individual's stereotypes about a particular event but also shapes consumer biases<sup>[15]</sup>. Stimulated by algorithms, online hate speech confines users to negative impressions of specific brands or lifestyles, reducing user satisfaction and loyalty<sup>[16]</sup>. For example, when teenagers are repeatedly exposed to extreme content that reinforces high levels of antagonism and conflict between social groups, this cognitive pattern will reduce social trust and subtly affect their risk preferences as consumers.

From a behavioral economics perspective, consumer behavior is closely related to self and social identity<sup>[17]</sup>. Online consumption and purchasing, exemplified by social media, represent symbols of identity. Algorithmically-recommended hate content is associated with specific products, leading young users to develop an anti-brand identity and seek group identity by expressing opposition<sup>[18]</sup>. In other words, younger consumers' purchasing and decision-making behavior is no longer based on product attributes, such as effectiveness or fulfillment of actual needs, but rather on social preferences and the expression of identity within a group or community. Hate speech and comments that exaggerate the psychological loss framework

lead consumers to deny the value of products to avoid negative impacts, thereby reducing purchase frequency<sup>[19]</sup>. Simultaneously, consumers may support or boycott certain products based on social preferences for self-identity expression, and their purchasing behavior reflects social attitudes. Furthermore, high-intensity emotions are common in hate speech, such as moral condemnation. This information directly influences users' current emotions and perceptions on social media platforms, forcing young users to the moral high ground<sup>[20]</sup>. In this context, the audience is no longer simply agreeing with opinions; it is psychologically compelled to engage in irrational consumption behavior, such as impulsively participating in a boycott or endorsing a particular brand. It is worth noting that the consumers' mental health issues are prominent under moralized consumption pressure when judging products based on morality rather than quality, since the pressure they may suffer becomes an apparent consequence<sup>[21]</sup>. Therefore, the proliferation of negative comments targeting specific companies or consumer groups has amplified the public's perception of risk. In conclusion, the stimulating effect of big data algorithms has further intensified consumer boycotts or brand stigmatization.

### 3. Conceptual Mechanism Framework

This paper proposes a conceptual framework with four consecutive stages: Media algorithmic, Psychological response, Identity/moral positioning, and Consumer behavior (**Figure 1**), showing through algorithms' repeated suggestions of specific information. Agenda-setting theory explains how platforms construct social priorities<sup>[13]</sup>. The information cocoon effect describes how users are confined to information environments that reinforce their own views<sup>[15]</sup>. Identity theory emphasizes how consumption reflects social belonging<sup>[17]</sup>. These perspectives collectively demonstrate how Algorithmic screening influences cognitive and emotional responses, thereby altering users' interpretations of identity and ultimately affecting consumption choices through principles such as loss aversion, social preference expression, and moralized decision-making in economic contexts.

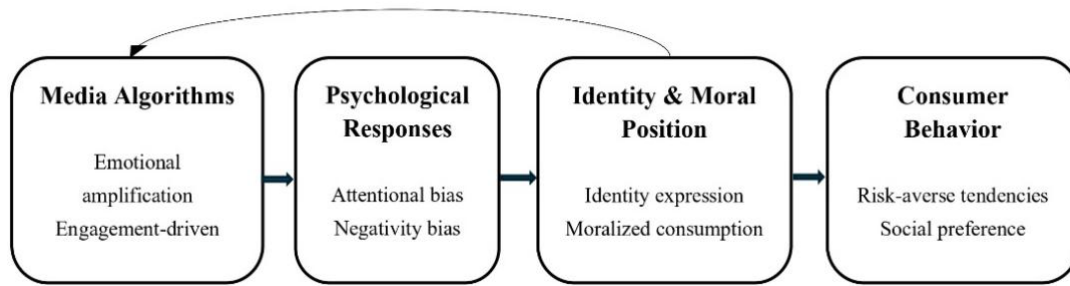


Figure 1. Conceptual Mechanism Framework.

Algorithm-driven social media produces content that users explore, which is neither neutral nor objective. Platforms, based on viewing habits, use big data algorithms and models to analyze and filter content statistically, ultimately recommending social media content that matches personal preferences. This reinforces how often a person is exposed to a specific issue and related discussions and attitudes. Emotional amplification refers to the tendency of social media algorithms to prioritize promoting content that can evoke high-arousal emotional responses, especially those that can cause negative emotions such as anger or fear in the audience. The algorithm, based on calculations of dwell time and interaction rate, has led to a surge in exposure to polarized debates and controversial social topics [4,6,8]. Interaction-driven approaches describe how social media algorithms prioritize quantifiable metrics of user interaction, such as likes, shares, comments, and viewing time, potentially at the expense of other values, such as authenticity, accuracy, or civility. Previous studies have confirmed that the information shared on social media is not random but prioritizes the delivery of highly emotional content under platform-traffic-driven principles [7,10]. As a result, users are repeatedly exposed to emotionally charged and extreme statements, leading to attentional biases. Attentional bias refers to an individual's selective focus on specific categories of stimuli [15]. Negative bias arises from the impact of negative emotions or information on an individual's psychological cognition and decision-making, and its effects are greater and more lasting than those of neutral or positive events of equal intensity. Once hateful content captures attention, negative bias can lead younger users to overestimate social risks and develop more hostile attitudes towards brands associated with their own group. Since algorithmic recommendations consistently reinforce users' existing emotional tendencies, users find themselves

immersed in a uniform information environment branded with emotional tags [16]. Of particular note is the rampant spread and amplification of negative information on the internet, and the difficulty for objective and neutral information to attract traffic and gain exposure, which has led to an imbalance in the online content ecosystem [20]. When individuals are exposed to emotional content, an increase in risk perception leads to a decline in social trust and the formation of a preconceived, hostile interpretation framework toward brands and even specific products [19]. These changes are not temporary shifts but slowly nourish users' stable cognitive framework, leading them to subconsciously bias their processing of consumer information and interpret content through this lens.

Based on the discussion in the first two stages, this paper proposes Proposition 1: Media algorithms prioritize the recommendation of hateful content with highly stimulating characteristics, which broadly increases the likelihood of young users being exposed to negative social information, exacerbates individuals' cognitive negative biases and perceived social risks, and causes them to exceed the baseline level.

When psychological mechanisms are repeatedly activated, users enter the third stage: identity and moral positioning. Social media is not only a platform for information dissemination and promotion, but also provides opportunities for different users to affirm and strengthen their identity and sense of belonging [17]. Identity expression refers to using consumption choices as symbolic acts, purposefully used to communicate or demonstrate one's identity within a specific social group, thereby conveying personal values and moral stances. Under the influence of emotionally charged content promoted by the platform, users begin to view brands and consumption choices in a more group-oriented and adversarial way [4]. Algorithms

amplify hate or negative narratives, symbolizing certain companies, products, or consumer behaviors as value orientations and moral stances<sup>[9]</sup>. Moralized consumption is a reinforced form of identity expression in which products or brands are categorized as morally charged binary oppositions, and purchasing decisions are made to demonstrate virtue or uphold moral principles. This prompts consumers to make purchasing decisions not based on product utility, but on group identity and moral judgment. For example, supporting domestic brands may be imbued with patriotic significance, while boycotting an international brand may be seen as a symbol of justice and fairness<sup>[14]</sup>. Under this mechanism, consumption is no longer an economic behavior, but an expression of identity. In this behavior, boycotts are not only economic considerations but also moralized consumption. Refusing to buy is seen as a form of resistance to injustice, thereby satisfying people's need for moral identity<sup>[1]</sup>.

Identity Polarization and Moralized Consumption clarify how exposure to hate speech promotes moralized consumption through identity polarization. Therefore, Proposition 2 is introduced: Repeated exposure to hate speech generated by algorithmic recommendations worsens polarization within and outside the youth population, causing them to see consumption choices as symbolic acts of moral stance and group affiliation, rather than as objective evaluations.

Ultimately, these psychological and identity dynamics translate into actual economic behavior through mechanisms of behavioral economics, significantly impacting consumer decisions. From a behavioral economics perspective, algorithm-driven hate content leads users to make more risk-averse, socially preference-driven decisions<sup>[11]</sup>. Risk aversion refers to an individual's preference for certain outcomes. In the context of algorithm-distorted consumption, consumers may avoid products considered to pose reputational or identity risks, thereby placing the social attributes of purchasing behavior above functional utility. On the one hand, they may avoid buying products that are at the center of a storm of public opinion because they fear social opinion. On the other hand, consumers may also go to the other extreme, overreacting under strong emotional stimulation, and impulsively boycotting or consuming products with social labels without think-

ing<sup>[20]</sup>. Social preference describes an economic decision that overemphasizes in-group interests and well-being, favoring members within the group while sacrificing the interests of members outside the group. Under algorithmic intervention, the boycott of products is not only an individual avoidance behavior but is also driven by social preferences. Specifically, it is driven by a desire to collectively punish brands outside the group, thereby strengthening solidarity and norms within the group. This kind of consumption behavior violates basic economic logic, causing consumers to no longer primarily consider practical factors such as quality, price, and needs when making purchases, but instead to be dominated by emotional venting and social pressure. More importantly, as algorithms continue to push similar content, this behavioral feedback further reinforces users' identity bias and psychological bias, leading to information polarization and the frequent occurrence of irrational consumption behavior<sup>[15,16]</sup>.

Consumer behavior and algorithmic system feedback are mutually reinforcing; the former feeds back to the latter, which in turn perpetuates irrational decision-making. This paper proposes Proposition 3: Once identity-driven, morally charged consumer behavior occurs, it generates signals of online participation. These signals are captured by platform algorithms, reinforcing the initial hate speech recommendation pattern and creating a self-reinforcing cycle of economically irrational decision-making.

Based on the three propositions mentioned above, this study's theoretical contributions go beyond existing conclusions, such as verifying that algorithms amplify emotions and negative information, causing bias. Proposition one, based on the fundamental fact that algorithms prioritize recommending high-arousal content, proposes that in adolescents, amplified anger triggers a self-reinforcing cycle of algorithm retraining. Proposition two highlights the interaction between short-video platform agenda-setting and interest communities, leading to parallel agendas for the same event across different communities, making adolescents the most sensitive recipients. Proposition three elucidates the interaction between short video recommendation systems and interest communities. The algorithm pushes content based on community emotional tags, and high-intensity expressions within communities are identified by the algorithm as high-value signals, guiding con-

tent recommendations in reverse, ultimately forming a reinforcing closed loop from identity-driven consumption to irrational decision-making. In conclusion, this paper elucidates a self-reinforcing operating mechanism that influences not only individual consumer choices but also brand reputation, corporate strategy, and the stability of the digital economy ecosystem. Therefore, understanding this mechanism has significant theoretical and practical implications for platform governance, social policy formulation, and corporate risk management.

#### 4. Comparative Platform Case Analysis

This short newsletter analyzes three popular social media platforms among young people, TikTok, Weibo, and RedNote, to explore how hate speech influences online users’ economic beliefs and consumption behaviors. TikTok, Weibo, and RedNote were chosen because they represent three mainstream algorithmic paradigms among Chinese youth: emotionally arousing short-video feeds, agenda-set-

ting opinion centers, and recommendation ecosystems based on interest-based communities. These three platforms differ in their main operating mechanisms and algorithmic logic. For example, TikTok uses interactive news feeds to attract user participation; Weibo relies on trending topics and hashtags to shape online public opinion; and RedNote promotes online communication and attracts users with similar interests by developing interest-based communities and groups. Based on the comparative analysis, this paper compares these three platforms across a conceptual framework comprising four dimensions: Dominant algorithmic logic, Typical emotional and arousal profile of content, Identity and community affordances, and Dominant consumption-related outcomes (**Table 1**). The dominant algorithmic logic emphasizes the diverse goals of prioritizing platform-recommended content; the typical emotion/arousal pattern examines which emotions are amplified when users use social media; the identity/community function explains how the platform builds user groups; and the dominant consumption outcome reveals typical forms of distorted economic behavior.

**Table 1.** A Comparative Analysis of Platform Mechanisms.

	<b>TikTok</b>	<b>Weibo</b>	<b>RedNote</b>
Dominant algorithmic logic	Optimize quantifiable metrics such as completion rate, likes, and comments, and maximize engagement with short, highly engaging content.	Amplify controversial topics through trending topics and hashtags to create a public discourse and agenda-setting.	Build highly sticky connections of commonality and social identity based on users’ interest tags and communities.
Typical emotional and arousal profile of content	Visual/auditory stimuli directly trigger instantaneous and intense emotional impact.	Long-term, sustained moral anger and public opinion surrounding social issues.	The desire for belonging and a sense of community within a group fosters resonance.
Identity and community affordances	Temporary emotional communities can be quickly formed through challenges and background music, resulting in high identity mobility.	Positions are declared by joining topic discussions, creating openly opposing “pro” and “con” camps.	Identity is built through notes, favorites, and group chats, exhibiting exclusivity.
Dominant consumption-related outcomes	Impulsive/symbolic consumption and boycotts. Decisions are based on emotional resonance rather than product information.	Avoidance or declarative consumption driven by public pressure. Consumption behavior represents a moral stance.	Conscious consumption is driven by a sense of belonging to a particular social group, as people pursue a niche.

TikTok emphasizes user stimulation through emotionally charged content in short-form videos. The high emotional arousal characteristic of short videos easily triggers intuitive and emotional decisions in consumers <sup>[22]</sup>. TikTok’s core logic is to maximize user engagement by

stimulating user emotions (Phase 1). Content that embeds hate speech into strong audiovisual stimuli is often favored by the algorithm because it easily evokes strong, immediate user reactions (Phase 2). This fosters short-lived, emotion-driven group gatherings (Phase 3). Users’ identities

are defined by their immediate emotional reactions to videos. Therefore, the primary consumption outcome is impulsive, symbolic behavior (Phase 4). For example, a short video inciting antagonism between domestic and imported products, after being recommended by the algorithm, can spread virally<sup>[7]</sup>. This demonstrates how highly arousing recommendation logic can reinforce identity-based consumption choices by amplifying emotional signals rather than product attributes<sup>[23]</sup>. This ignites public sentiment instantly, leading to irrational boycotts of specific foreign brands or impulsive purchases of domestic products. The algorithm pushes highly interactive content to more young users, reinforcing consumer decisions based on group identity<sup>[18]</sup>. This characteristic, translating social emotion into economic behavior, inhibits rational choices based on product quality.

Weibo focuses on setting public agendas through trending topics and hashtag lists, influencing the construction of consumer beliefs. The importance of defining the agenda lies in how media attention to specific issues influences public perception of essential matters<sup>[13]</sup>. The core logic of Weibo is public agenda setting and the amplification of controversial topics (Stage 1). Its algorithm, centered on trending topics, widely promotes those who can spark public debate and moral scrutiny. Hate speech is often placed within a macro-narrative framework of social justice, forming sustained, morally evaluative emotions (Stage 2). Users publicly express their stances by participating in social topics and identifying with a particular camp, thereby fostering online antagonism (Stage 3). The dominant consumption pattern is risk aversion or symbolic conformity (Stage 4). For example, if a product is embroiled in a socially contentious issue and trends on social media, regardless of the facts, it can trigger a panic-driven boycott in the capital markets, impacting consumer purchasing behavior and investor decisions. Its powerful agenda-setting ability makes negative information stand out, so that, regardless of whether the facts presented in social media content are accurate, it can result in market reactions or panic-driven consumer boycotts<sup>[14]</sup>. Algorithms amplify the visibility of negative public opinion, thereby affecting the effectiveness of product market policies at the macro level. Negatively setting topics and agendas related to brands can lead to widespread negative attitudes and

opinions among the public, reducing consumer purchasing desires<sup>[24]</sup>.

RedNote is a representative of interest-based communities. Shared interests enhance consumer experience, build social connections, and strengthen group identity. People appreciate information that aligns with their own interests and viewpoints because it reinforces their sense of identity<sup>[17,25]</sup>. RedNote's logic is based on curated content and identity-based community building (Phase 1). The platform's algorithm prioritizes content closely related to the user's interest tags, creating an information flow that reflects a niche lifestyle. A sense of belonging and uniqueness becomes a key factor triggering emotional responses (Phase 2). This logic constructs exclusive lifestyle and consumption habits (Phase 3). Therefore, group-based investment or faith-based consumption becomes dominant on the platform (Phase 4). Consumers are willing to pay a premium for products, services, or experiences selected and promoted by their niche communities because these purchases are themselves expensive status symbols, representing a sense of belonging and refined taste within their group. A study in the field of mental health showed that sharing ADHD-related (Attention-Deficit/Hyperactivity Disorder) knowledge and positive self-identification through social media not only attracts a large audience with similar interests or experiences but also reinforces the self-acceptance of their ADHD identity<sup>[25]</sup>. Based on this, audiences are often willing to further extend this identification experience through consumption behaviors, such as purchasing recommended books, participating in paid courses, or attending lectures. Thus, it is evident that interests can transform information preferences into concrete consumption choices by establishing emotional and identity connections<sup>[24]</sup>. When algorithms push content that aligns with individual and community values, an exclusive consumption mindset forms, this causes young consumers to abandon rational comparisons and instead pursue community approval, distorting their consumption logic<sup>[23]</sup>.

## 5. Conclusions

This short commentary demonstrates the impact of algorithmically amplified hate speech on young consumers, offering practical implications from psychological,

communication, and economic perspectives. For platforms, a monitoring system should be introduced into the algorithm screening stage to supervise platforms and shift from passive content review to proactive content moderation, ensuring a harmonious and stable online environment. For example, monitoring and tracking high-arousal negative content recommended to users under 18 years old can trigger the algorithm to reduce related keyword recommendations if comments tagged exceed 20%. The fourth stage, behavioral feedback, requires platforms to use diverse interactive evaluation criteria to assess whether algorithmic models might generate emotionally charged content, actively assume social responsibility, and engage in self-reflection. For consumers, given that young people are more easily influenced, public policy should help cultivate rational decision-making and promote objective, reasonable consumption habits. Inspired by the logic of psychological reaction stages, digital literacy courses can reveal how algorithms deliberately amplify emotions to attract attention. The third stage, identity/moral positioning, requires education systems to critically analyze how consumption choices are moralized in online narratives, helping young people distinguish identity expression from extreme consumerism. Furthermore, businesses and organizations should maintain a sense of crisis and improve their public opinion monitoring systems to respond more flexibly to market risks stemming from social emotions rather than from the product itself. For example, health advocacy products need to collaborate with community health workers and actively promote employee diversity to weaken moral binary thinking. The first and third stages provide inspiration for business management by using predictive analytics to track product- and related-topic discussion trends in real time. Traditional public relations strategies often fail when product boycotts are driven by moralistic identity. Companies can decouple consumer choices from moral standards by engaging in dialogue with respected insiders rather than celebrities, or by emphasizing narratives of diversity among their employees.

This paper proposes three propositions based on a mechanism-driven framework, linking the algorithmic amplification of hate speech to adolescent consumption behavior and connecting it through cognitive-emotional

and identity pathways. Unlike previous studies that viewed these factors in isolation, this short communication study elucidates their interactions and proposes testable propositions for future research. Future empirical research can quantify the impact of online hate speech on young users' consumption choices, particularly through comparative analysis across different social media platforms. Several research questions could be explored in future studies. First, how does algorithmic exposure to hate content causally affect youth risk perception and brand trust? Second, what psychological pathways, such as cognitive bias and moral positioning, could mediate hate-speech effects on consumption? Third, how do different algorithmic architectures produce distinct behavioral outcomes, such as short-video, hashtag, and community-feed? Moreover, diverse methodologies can be considered in examining the adoptability of the frameworks proposed in this paper to a broad online environment, including computational emotion analysis, survey-based causal-mediation modelling, randomized exposure experiments, and cross-platform behavioral-log comparisons. Moreover, the framework proposed in this paper provides a reference for future empirical research, which is crucial for verifying its core mechanisms. The cognitive-emotional-identity identification pathway proposed by the proposition can be tested by analyzing mediating pathways. Future research can explore how specific psychological mediating factors moderate the impact of hate speech on consumption, such as moral degree or identification strength. In conclusion, this commentary is crucial for building a healthier, more rational, and sustainable future digital economy.

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The author declares no conflict of interest.

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