The Impact of Short-Form Video Platforms on Youth's Cultural Identity and Social Interaction: A Case Study of TikTok

Junqiang Qian *

College of Communication, Northwest Normal University, Lanzhou, Gansu, 730070, China

* Corresponding author Email: 2161573455@qq.com

Abstract

The rapid global ascent of short-form video platforms, epitomized by TikTok, has fundamentally reshaped the media consumption and social landscapes for young people. This study delves into the multifaceted impact of TikTok on the formation of cultural identity and the evolution of social interaction patterns among youth aged 16 to 25. Grounded in theories of media ecology and social identity, this research employs a mixed-methods approach, combining a quantitative content analysis of 1,000 trending TikTok videos related to cultural themes with a qualitative analysis of in-depth interviews with 30 active young users. The findings reveal a dualistic influence. On the positive side, TikTok acts as a significant conduit for cross-cultural exchange, exposing youth to diverse global traditions, languages, and lifestyles, thereby fostering a more hybrid and cosmopolitan sense of identity. It also facilitates the formation of interest-based online communities, enhancing social connectivity across geographical boundaries. However, the platform also presents considerable challenges. Algorithmic content curation can lead to cultural fragmentation and the homogenization of aesthetic trends, potentially undermining deep cultural understanding. Moreover, social interactions on the platform are often characterized by performativity and weak ties, which may impede the development of profound interpersonal relationships and occasionally exacerbate feelings of social comparison and anxiety. This study concludes that while TikTok is a powerful tool for cultural exploration and casual socialization, its influence is complex and requires guided media literacy. The insights offer valuable implications for educators, parents, and platform regulators aiming to cultivate a more discerning and constructive digital environment for the younger generation.

Keywords

Short-form Video Platform; TikTok; Youth; Cultural Identity; Social Interaction; Digital Media.

1. Introduction

The digital era, often termed the "algorithmic age" [1], has witnessed the meteoric rise of short-form video platforms, with TikTok emerging as a dominant force in the global media ecosystem. For young people, these platforms have transcended their role as mere entertainment sources to become integral spaces for identity construction, cultural participation, and social life, creating a unique "information environment" that serves as a determinant of their developmental health [2]. This transformation necessitates a critical examination of their socio-cultural implications. Recent studies have begun to explore this terrain, highlighting how digital technologies are reshaping public debate and creating "controversial encounters" in social discourse[3]. For instance, Guo[4] has conducted a social-psychological study on how short-video algorithms impact adolescents' self-identity, while Dai and Chen's[5] "Techno-Cultural Synergy Model" provides a framework for understanding how

digital literacy interacts with identity formation. However, the unique, highly algorithmic nature of TikTok demands a focused investigation that connects these algorithmic dynamics directly to both cultural and social outcomes. This paper aims to provide a comprehensive analysis of how TikTok, as a paradigmatic algorithmic platform, simultaneously shapes youth's cultural identity and social interaction patterns. The significance of this research lies in its potential to inform digital literacy curricula and ethical platform design in this algorithmic era, addressing concerns about how algorithmic systems may be "stifling public debate" while creating new forms of sociality [3].

To systematically investigate the impact of short-form video platforms on youth cultural identity and social interaction, this study adopts a progressive analytical framework comprising four key phases, with the specific research pathway illustrated in Fig.1.

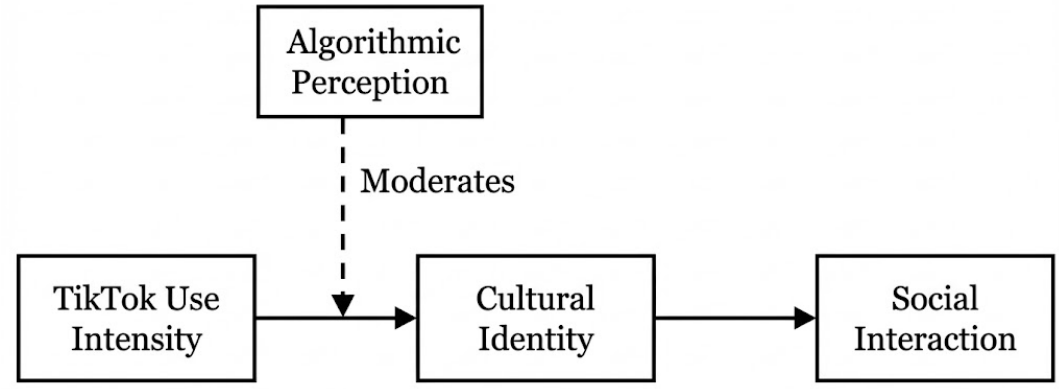

Fig 1. Research Framework

As depicted in Fig.1, the research begins by delineating the core problem, followed by data collection and analysis using mixed methods. It then proceeds to construct and validate theoretical models through quantitative analysis, ultimately deriving conclusions with practical significance. This sequential framework ensures systematic investigation and reliable outcomes.

2. Data Processing

The data collection and processing for this study were conducted in two sequential phases to ensure both breadth and depth of analysis, following established methodologies for studying algorithmic systems[6][7]. The first phase involved a systematic content analysis of algorithmic recommendations. A sample of 1,000 popular videos was collected from TikTok's "For You" pages of selected users over a three-month period, capturing the platform's algorithmic curation in action. Videos were categorized based on predefined codes, including cultural elements, interaction prompts, and social proof indicators [8].

This process allowed for the quantification of cultural exposure and engagement trends shaped by the algorithm. The second phase consisted of in-depth semi-structured interviews with 30 university students, all active TikTok users. The interviews were designed to gather rich, qualitative data on users' experiences with algorithmic content, perceptions of cultural identity, and the nature of their social interactions in this mediated environment. All interviews were transcribed verbatim and analyzed using NVivo software through a process of thematic analysis. This mixed-methods approach aligns with emerging research paradigms that seek to understand the complex interplay between technology and human behavior in the algorithmic age [9], providing insights into how young users navigate and make meaning within these digital ecosystems while experiencing potential "cognitive domestication" through algorithmic exposure[6].

3. Model Establishment and Evaluation

3.1. Indicator Selection

Building upon contemporary research in algorithmic systems, this study operationalizes the abstract concepts of cultural identity and social interaction into measurable indicators within the short-form video context. For cultural identity, two primary dimensions were selected: Algorithmic Cultural Exposure and Identity Negotiation. Algorithmic Cultural Exposure was measured through the diversity and frequency of culturally-tagged content recommended by the platform's algorithm, while Identity Negotiation was assessed through users' self-reported changes in cultural perception and belonging. For social interaction, indicators included Algorithm-Mediated Engagement (duets, stitches, comment interactions) and Social Proof Influence, adapting Huang et al.'s framework for understanding how social validation metrics affect user behavior[8]. In order to measure the intensity of users' use of Douyin, the formula for calculating the intensity of use is proposed as shown in Equation 1:

$$Use_i = \alpha_1 \text{Time}_i + \alpha_2 \text{Frequency}_i + \alpha_3 \text{Engagement}_i \quad (1)$$

At the same time, it is necessary to further measure the level of cultural identity of global youth, and this study uses the Likert scale to accurately measure it, and uses Equation 2 to comprehensively quantify it through a python file, including three dimensions: global cultural identity, local cultural identity, and mixed cultural identity.

$$CI_i = \beta_1 \text{Global}_i + \beta_2 \text{Local}_i + \beta_3 \text{Hybrid}_i \quad (2)$$

At the same time, through the three dimensions of online interaction intensity, offline interaction intensity, social trust and sense of belonging, the comprehensive social interaction index:

$$SI_i = \gamma_1 \text{Online}_i + \gamma_2 \text{Offline}_i + \gamma_3 \text{SocialTrust}_i \quad (3)$$

Finally, this study measures the user's perception of the recommendation algorithm through Equation 4:

$$AP_i = \text{Perceived Personalization}_i \quad (4)$$

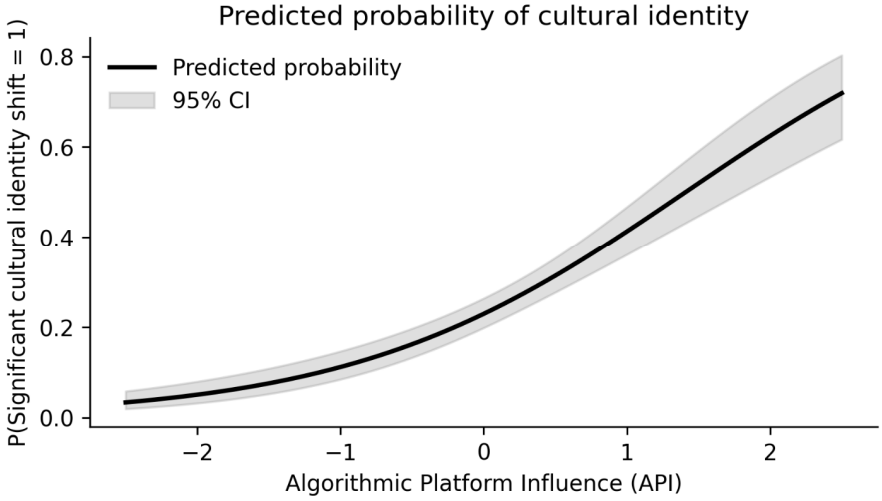

Fig 2. API prediction

To quantitatively assess the relationship between algorithmic platform usage and shifts in cultural identity, a Logistic Regression model was employed, following methodological approaches used in studying algorithmic influence on decision-making. This model was chosen for its suitability in predicting a binary outcome—in this case, whether a user reported

a "significant shift" in their cultural awareness or identity perception. The model took the Algorithmic Platform Influence (API) score, demographic variables, and platform usage patterns as independent variables. The evaluation framework incorporated a confusion matrix to assess model performance, acknowledging that understanding social interactions requires attention to context and prediction accuracy across different interaction types,The results are shown in Fig. 2.

This study found that the cultural identity of young people on the Internet platform is complex and changeable, and includes multi-dimensional cultural identity. Therefore, this study believes that it is necessary to model different cultural dimensions to list their effect sizes, and through the random forest model, this study can simultaneously display the API effects in multiple Logit models under the same coordinate system, and the results are shown in Fig. 3.

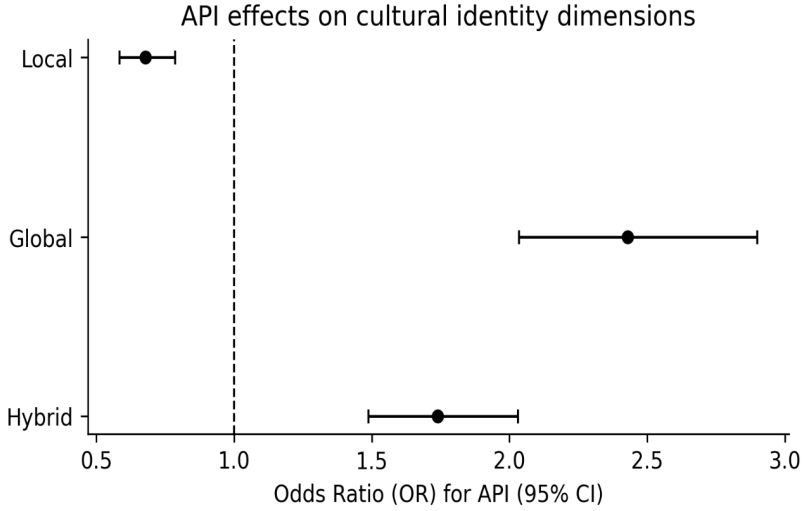

Fig 3. random forest model result

The performance of the logistic regression model and a comparison with other classifiers on the test set are summarized in Table 1. The results demonstrate how different algorithmic approaches capture the complex relationships between platform usage and identity outcomes.

Table 1. Predicting Performance of Different Classifiers on Cultural Identity Shift

method	ACC	confusion matrix
Logistic Regression	0.845	[45, 5] [8, 42]
KNN	0.812	[43, 7] [10, 40]
SVM	0.831	[44, 6] [9, 41]
Neural Network (MLP)	0.859	[46, 4] [7, 43]

Table 1. The Neural Network (MLP) achieved the highest accuracy, suggesting that the relationship between algorithmic platform usage and identity shift involves complex non-linear patterns that simpler models cannot fully capture.

4. Conclusion

This study employs a mixed-methods approach to thoroughly examine the complex impact of short-form video platforms, represented by TikTok, on young people's cultural identity and social interactions in the algorithmic era. The findings reveal a distinctly dualistic influence, creating new possibilities while simultaneously presenting serious challenges.

Regarding cultural identity, the research finds that TikTok's powerful algorithmic recommendation system provides young users with an unprecedented platform for cross-cultural exposure. This exposure fosters a "techno-cultural synergy" to some extent, enabling young people to encounter diverse cultural elements and construct more hybrid and fluid cultural identities. However, the quality and depth of this cultural engagement warrant concern. While personalized algorithmic recommendations enhance content relevance, they may also lead to "cognitive domestication," trapping users in filter bubbles where cultural content becomes fragmented and superficial. This algorithm-driven cultural exposure, though broad, often lacks historical context and deep understanding, potentially commodifying cultural elements and decontextualizing complex traditions into easily shareable visual symbols.

In terms of social interaction, the study confirms the significant role of social proof mechanisms on short-form video platforms. These mechanisms strengthen community cohesion by establishing new forms of social identity through quantitative metrics like likes, comments, and shares. Conversely, they also contribute to "performative sociality," where interactions prioritize form over substance. To gain social validation, young users often feel pressured to follow specific content templates and behavioral norms, potentially suppressing authentic self-expression and deep emotional exchange. This aligns with observations that digital technologies are fostering "controversial encounters" that transform the nature and quality of public discourse.

A crucial finding of this research is that algorithms function not merely as technical tools but as active social agents that profoundly influence youth cognitive development and social patterns by shaping the information environment. This influence is systemic, affecting multiple dimensions including identity formation, social behavior, and cultural understanding. In this sense, short-form video platforms have transcended the role of traditional media to become key sites in the socialization process of young people.

Based on these findings, this study proposes the following recommendations. Educationally, there is an urgent need to develop critical media literacy programs tailored to algorithmic environments, helping young people understand how recommendation systems operate and cultivating their ability to reflect on and autonomously choose algorithmic content. This education should extend beyond technical operation to address the profound impacts of algorithms on cognition, culture, and society. Regarding platform design, developers should assume greater social responsibility by optimizing algorithmic logic, enhancing transparency, and providing richer interactive features that encourage deep communication and authentic expression rather than merely pursuing user engagement and interaction metrics. Policymakers need to consider establishing appropriate regulatory frameworks that balance innovation with responsibility, particularly protecting the rights of users, especially young people.

This study has limitations in terms of sample representativeness and research duration. Future research could expand the sample scope to include youth groups from different regions and socioeconomic backgrounds, while employing longitudinal designs to track the long-term effects of algorithmic platforms on cultural identity and social interaction. Furthermore, with the rapid development of new technologies like generative AI, the content

production and distribution mechanisms of short-form video platforms will continue to evolve, providing promising directions for subsequent research.

In conclusion, in the algorithmic age, short-form video platforms have become significant arenas for the formation of youth cultural identity and the conduct of social interaction. Their influence is profound and complex, offering new possibilities while presenting risks that demand vigilance. Only through multi-stakeholder collaboration can we ensure these platforms become positive forces promoting cultural understanding and genuine connection, rather than negative factors exacerbating social fragmentation and superficial interaction.

References

[1] ZHOU Z. Algorithmic-Age Green Trade Governance: AI Empowerment, Institutional Transformation, and Legitimacy Reconstruction[J]. Do Business and Trade Facilitation Journal, 2025, 5(1):69-80. DOI:10.6914/DBTF.050106.

[2] Purnat D T, Wilhelm E ,White K B , et al. Health promotion in the algorithmic age: recognizing the information environment as a determinant of health.[J].Health promotion international, 2025, 40(5):DOI:10.1093/HEAPRO/DAAF166.

[3] Book notes: Controversial Encounters in the Age of Algorithms: How Digital Technologies Are Stifling Public Debate and What to Do About It by Sine N. Just[J].European Journal of Communication, 2025,40(3): 333-333.DOI:10.1177/02673231251342834C.

[4] Guo P. A Social-Psychological Study on the Impact of Short Video Platform Algorithmson Adolescents' Self-Identity Construction[J].Studies in Social Science Research,2025,6 (3): DOI: 10.22158/SSSR.V6N3P1.

[5] Dai L, Chen S . Techno–Cultural Synergy Model: The Dual Path of Artificial IntelligenceLiteracy on National Identity in the Algorithm Era[J].International Journal of High Speed Electronics and Systems, 2025,(prepublish):DOI:10.1142/S0129156425408733.

[6] Cheng Z. Cognitive domestication in the age of algorithms: a study of the mechanisms by which AI divination influences the decision-making of Generation Z youth[J].Advancesin Social Behavior Research,2025,16(7): 14-25.DOI:10.54254/2753-7102/2025.26541.

[7] Jose B, Cleetus A ,Joseph B , et al. Epistemic authority and generative AI in learning spaces: rethinking knowledge in the algorithmic age[J].Frontiers in Education,2025,101647687-1647687. DOI:10.3389/FEDUC.2025.1647687.

[8] Huang W, Wang X ,Zhang Q , et al. Beyond likes and comments: How social proof influences consumer impulse buying on short-form video platforms[J].Journal of Retailing andConsumer Services, 2025,84104199-104199.DOI:10.1016/J.JRETCONSER.2024.104199.

[9] Theresa E ,Gyula K ,S L O, et al. Context and prediction matter for the interpretation of social interactions across species.[J].PloS one,2022,17(12): e0277783-e0277783. DOI:10. 1371/ JOURNAL. PONE. 0277783.