RESEARCH ARTICLE

Breaking the deadlock and reshaping: algorithmic narrative drives short videos to enhance China's international communication power and national image construction

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Abstract: *This paper focuses on the core issue of how algorithmic storytelling drives short videos to enhance China's international communication power and national image construction, conducting research against the backdrop of digital technological transformation and the globalization of short video dissemination. First, it analyzes the technical-content interaction mechanisms driving algorithmic narrative-driven short video international communication, including the technical architecture of algorithmic systems such as data collection, analysis, and personalized recommendations; the evolution of narrative strategies under algorithmic guidance in terms of precision, emotional resonance, and structural simplicity; and the dissemination pathways achieved through initial circle penetration and the identification of connection points between circles via algorithmic recommendations. Through three case studies—TikTok, Li Ziqi's short videos, and CCTV News' short videos—the paper concretely demonstrates the practical effectiveness of algorithmic narratives in the international dissemination of short videos. For instance, TikTok's global promotion of Chinese cultural elements, Li Ziqi's shaping of China's rural and traditional cultural image, and CCTV News' international dissemination of China's development across multiple fields. Additionally, the paper identifies current challenges, including technical issues such as algorithmic black boxes and recommendation biases, content-related challenges like cultural adaptation and symbolic misinterpretation, and institutional challenges such as platform governance and international regulatory constraints. Finally, it proposes a collaborative optimization pathway for constructing a culturally sensitive algorithmic narrative system, including the development of culturally adapted algorithms, the construction of a multi-dimensional narrative matrix, and the establishment of an 'government-platform-audience' interactive framework, aiming to provide insights for enhancing China's international communication capabilities and shaping a positive national image.*

Keywords: algorithmic storytelling; short videos; international communication power; national image construction; technology-content interaction

1.Introduction

In the era of rapid digital advancement, the landscape of information dissemination has undergone profound transformations. Algorithmic storytelling, as an emerging communication paradigm, is increasingly permeating various sectors, fundamentally reshaping how information is created, distributed, and consumed. Leveraging

distinctive advantages—compact format, rich content, diverse formats, and rapid dissemination—short videos have rapidly emerged as a globally popular new media form, becoming a vital platform for international communication.

Algorithmic storytelling, through the analysis and processing of massive data, can accurately grasp users'interests, preferences, and behavioral habits, achieving personalized information delivery. In the short video domain, algorithmic storytelling recommends short video content that aligns with users' tastes based on their viewing history, likes, comments, and other data, significantly improving the match between users and content, and enhancing user engagement and stickiness (Cai & Wang, 2024). For example, short video platforms like TikTok and Kuaishou utilize algorithmic recommendation technology to precisely deliver short videos of interest to users, enabling them to quickly find content they like among a vast array of video options.

The international dissemination of short videos has also shown a vigorous development trend. Through short video platforms, people from different countries and regions can share their cultures, lifestyles, and landscapes, enhancing mutual understanding and communication. Short videos have also become an important means of international communication, allowing significant social events, values, and brand images to spread rapidly around the world (H. Zhao, 2022). Taking TikTok as an example, it boasts a massive user base globally and has become an important window for China's culture to reach the world. Many aspects of China's traditional culture, cuisine, and music have gained global popularity and attention through TikTok's short video platform.

The concept of "algorithmic storytelling" discussed in this paper goes beyond the passive sorting and distribution of information content by algorithms. It refers to the entire process where algorithms serve as central mediators, participating in determining "what stories to tell, who to tell them to, and how to present them in terms of timing and pacing" through computational analysis, prediction, and optimization of massive data. Unlike traditional narratives centered on editors and creators, algorithmic storytelling incorporates quantifiable variables such as user profiles, interest tags, dwell time, and interaction behaviors. This makes storytelling both a process of meaning construction and a continuously adjustable computational process. In other words, algorithms act as both content distribution mechanisms and "invisible narrators" that shape visibility, organize narrative units, and reconstruct attention structures. In the context of international communication, algorithmic storytelling deeply intervenes in how national images, values, and cultural symbols are deconstructed, reorganized, and presented to global audiences. Therefore, it requires examination from both technical logic and cultural context dimensions.

Based on the above theoretical and practical background, this paper attempts to explore how algorithmic narrative influences China's international communication power and national image construction by examining the typical field of short video platforms, starting from the interplay between algorithmic technical logic and cultural narrative practices. Specifically, this paper aims to address the following three interconnected research questions: First, how does algorithmic narrative reshape the visibility structure of content through technical mechanisms and recommendation logic on short video platforms, thereby affecting the way China-related content is' seen 'and' understood 'in global information flows? Second, in three different practices involving platform entities (such as TikTok), individual creators (such as Li Ziqi), and mainstream media institutions (such as CCTV News' overseas accounts), how do algorithmic narratives participate in shaping China's national image through specific narrative strategies and communication pathways? What commonalities and differences exist among these pathways? Third, in existing short video practices, what structural constraints at the technical, content, and institutional levels hinder algorithmic narrative-driven China's international communication and national image construction? On this basis, how can an optimized path be constructed that balances cultural sensitivity and algorithmic efficiency? To address these research questions, this paper will establish an analytical framework in the literature review, explain the methods of multi-case comparison and text analysis in the research design section, and then conduct a systematic analysis through three case studies: TikTok, Li Ziqi, and CCTV News'overseas accounts. Finally, it will distill the practical challenges and collaborative optimization paths for algorithmic narrative-driven short videos to enhance China's international communication power and national image construction.

2. Literature Review

The discussion surrounding algorithmic narratives can be organized along three research lineages: First, narratology and media narrative studies emphasize the organization of story plots, character construction, and narrative perspectives, focusing on the question of 'how to tell a story.' Second, algorithmic recommendation and platform studies explore how platforms reshape the paths and sequences through which audiences access information via personalized recommendations, starting from datafication, computability, and platform-based governance. Third, international communication and national image studies highlight the interactions between media technology, discursive power, and cultural politics. This paper interprets algorithmic narratives as the intersection of these three lineages: they not only continue the traditional narrative focus on story structure and emotional mobilization but also embed the computational logic of algorithmic recommendations regarding attention allocation and visibility sequencing, while directly influencing the construction of national image and international discourse power. Therefore, in the literature review and subsequent analysis, this paper will

systematically discuss how algorithmic narratives operate in the short video field and their impact on China's international communication, focusing on four dimensions: technical architecture—content narrative—dissemination—governance mechanisms.'

2.1 Technical Architecture: Short Video Adaptation Logic of Algorithmic Narrative

The algorithmic systems of short video platforms function as intelligent content filters. Through sophisticated technical architectures, they comprehensively collect and deeply analyze user data, ultimately delivering personalized video recommendation services (Tan & Yoon, 2025).

During the data collection phase, short video platforms employ various technical means to comprehensively gather user behavior data (Zhu, 2025). Taking Douyin as an example, it uses front-end tracking technology to record users'various operational behaviors in real time during application usage, such as browsing history, recording the ID, duration, and time of each video viewed; like actions, including the video content liked and the like time; comment content, analyzing keywords and emotional tendencies in comments; sharing paths, understanding which platforms users share videos to and with whom. Meanwhile, TikTok also leverages device information collection technology to obtain users' device models, operating systems, and network environments, providing rich background data for subsequent analysis. According to relevant statistics, TikTok collects hundreds of millions of user behavior data entries daily, and this massive data forms a solid foundation for algorithmic analysis.

In terms of data analysis, short video platforms employ advanced machine learning and deep learning algorithms. First, through natural language processing technology, the platform analyzes users'comments, search keywords, and other text data to extract semantic information, understanding users'interests and concerns (Yang, 2025). For example, when users frequently search for keywords related to "China cuisine," the algorithm can identify their interest in China cuisine. Then, using computer vision technology, the platform analyzes video content to extract visual features such as people, scenes, and objects in the frame, as well as audio features like background music and voice content. Through these techniques, the algorithm can classify and annotate video content, establishing a detailed content feature library. Finally, by applying data mining algorithms such as cluster analysis and association rule mining, the platform conducts in-depth analysis of user behavior data and video content feature data to identify the correlation between user behavior patterns and video content, providing a basis for personalized recommendations.

Based on the aforementioned data collection and analysis, short video platforms have implemented personalized recommendation algorithms. These algorithms generate unique user profiles by analyzing factors such as users 'interests, preferences, and behavioral patterns. For instance, an algorithm would define a user who frequently watches tech-related short videos and likes AI content as someone with a strong interest in technology, particularly artificial intelligence. The algorithm then uses this profile to filter and recommend short videos matching the user's interests from a vast video library. During the recommendation process, the algorithm continuously adjusts its strategies in real-time based on the user's latest behavioral data, ensuring the recommended content remains highly aligned with their interests. For example, when a user who primarily watches sports-related short videos suddenly starts frequently viewing travel-related content, the algorithm quickly detects this change and promptly increases the recommendation ratio of travel-related short videos (Shi, 2025).

2.2 Content Production: Evolution of Narrative Strategies Oriented by Algorithms

Under the influence of algorithms, short video narrative strategies have undergone significant evolution, transitioning from traditional content creation models to algorithm-driven precision-oriented storytelling. The accurate analysis of user profiles by algorithms provides crucial references for developing short video narrative strategies. By analyzing multi-dimensional data including users 'age, gender, geographic location, interests, and consumption habits, short video platforms can construct detailed and accurate user profiles (Lee et al., 2022). For instance, targeting young female users living in first-tier cities who enjoy fashion and beauty, platforms recommend short videos related to fashion styling and makeup tutorials based on their profile characteristics. Short video creators also utilize algorithm-provided user profile information to create targeted content, selecting narrative styles, presentation formats, and thematic content that align with their target audience's preferences. For example, creators might adopt fashionable and lively narrative styles, sharing personal makeup tips and fashion experiences through first-person perspectives, accompanied by exquisite visuals and popular music as background to attract user attention.

Short videos increasingly emphasize narrative strategies that foster emotional resonance and storytelling. Under algorithmic recommendation systems, content that resonates emotionally and delivers compelling narratives tends to achieve higher engagement metrics. For instance, videos chronicling ordinary people's struggles through authentic, heartwarming scenarios—highlighting their resilience in adversity—often strike a chord with viewers, evoking strong emotional responses (Salles, 2025). Such content typically accumulates massive likes, comments,

and shares, rapidly expanding its reach through algorithmic curation. Similarly, entertaining videos featuring clever plot designs and humorous performances not only provide emotional satisfaction in a lighthearted setting but also stand out in algorithmic recommendations.

Short videos employ a streamlined narrative structure to meet the demands of fast-paced dissemination. Given their brief duration and limited viewer attention spans, these videos must swiftly capture viewers' interest and deliver core messages within tight timeframes. A common approach is the "suspense-building opening + conflict-driven middle + resolution" framework: The opening establishes an engaging cliffhanger to draw viewers in, the middle section develops tension through conflict and conflict resolution, while the conclusion resolves issues with clarity, ensuring a complete viewing experience. This concise structure aligns with algorithmic requirements for efficient short video distribution, boosting viewership completion rates and increasing recommendation opportunities (Schellewald, 2022).

2.3 Communication and Diffusion: The Path of Breaking Through the Circle of Algorithmic Recommendation

In the short video ecosystem, audiences often form relatively closed "circles" based on factors like interests, cultural backgrounds, and geographic locations. These circles act like information cocoons, limiting cross-group content dissemination. Algorithmic recommendations, through their deep mining and precise analysis of user data, have become a key force in breaking down these barriers and promoting widespread content spread. The main pathways for breaking through these circles are reflected in the following aspects (Gao et al., 2023).

Algorithmic recommendations first lay the foundation for subsequent circle breakthroughs through precise penetration in the initial circle. Short video platforms will construct detailed user profiles based on data such as users' registration information, historical browsing records, and interactive behaviors, clearly identifying the initial circle to which users belong (Grusauskaite et al., 2024). For example, for overseas users interested in Chinese cuisine, the algorithm will prioritize pushing short videos featuring local specialty dishes from China, ensuring the content accurately reaches the target audience and generates high engagement and interaction rates within the initial circle. This precise penetration allows the content to accumulate sufficient "propagation potential" within the initial circle, creating conditions for its diffusion to other circles.

Subsequently, algorithmic recommendation systems leverage cross-analysis of user behavior data to identify connection points between social circles, enabling cross-circle dissemination. This paper defines the cross-user group diffusion pathways formed through social relationship chains and platform recommendation logic as 'social chain diffusion.' Theoretically, this framework extends the multi-level communication structure of 'opinion leaders-mass' from innovation diffusion theory, while aligning with the bridging relationships emphasized in weak ties theory in cross-circle information flow. This mechanism makes individual actions like reposting, liking, and following key nodes that trigger algorithmic amplification (J. Wang et al., 2023). Through this process, content can spread from one social circle to other related circles, continuously expanding its reach.

Multi-dimensional feature matching refers to a recommendation system that not only utilizes users' basic attributes and interest tags, but also employs joint modeling of multimodal features including video themes, emotional tones, audiovisual styles, and interaction intensity. This approach achieves dynamic matching across three dimensions: user, content, and context. Essentially, it integrates multiple mechanisms emphasized in recommendation system research—content features, collaborative filtering, and context awareness—revealing that seemingly random video recommendations are underpinned by highly algorithmically programmed matching logic (Xiao et al., 2025).

On this basis, the platform algorithm identifies 'connection points' between different circles—users and content that possess multiple interest tags, occupy structural holes, or exhibit high mediation in cross-cultural communities—thereby extending the originally limited to specific circles of China narrative to a more diverse audience (Amara et al., 2023). Through continuous identification and weighted recommendation of these connection points, the algorithm weaves a cross-circle communication network on short video platforms, providing structural possibilities for China-related content to transcend existing audience boundaries.

In addition, algorithmic recommendations also leverage social relationship chains to promote content diffusion across different circles. Social interaction behaviors such as likes, comments, and shares on short video platforms serve as crucial criteria for algorithms to evaluate content value. When users in a particular circle share a short video, the content appears in the recommendation lists of their social friends, who may belong to different circles. Algorithms adjust the recommendation weight of content based on the interaction frequency and intimacy among social friends, thereby increasing the exposure of content across cross-circle social relationship chains (Ullah & Lee, 2016). For example, when an overseas student shares a short video of a Chinese city's night view in their social circle, their foreign classmates may develop interest in the Chinese city and subsequently follow more related content, achieving dissemination from the student circle to the foreign classmates' circle.

Meanwhile, algorithmic recommendations break down cultural and interest barriers between communities through multi-dimensional extraction and matching of content features. For short videos with diverse characteristics, the algorithm extracts features from different dimensions, such as theme, style, and emotion, and matches these features with the preferences of users from different communities. For example, a short video blending China traditional music and modern dance will extract features like "China traditional music" and "modern dance," and recommend them to communities that prefer China traditional music and those that enjoy modern dance, respectively. This multi-dimensional matching approach enables content to transcend interest differences across different communities and be accepted by a broader range of audiences (Z. Zhang & Zhang, 2025).

However, algorithmic recommendations face challenges in promoting cross-circulation. On one hand, over-reliance on algorithms may exacerbate the "information cocoon" phenomenon. While algorithms aim to break down social circles, recommendations based solely on users 'historical preferences could confine them to increasingly narrow information scopes. On the other hand, cultural differences between communities may lead to misunderstandings or resistance during content dissemination, as algorithms struggle to fully capture nuanced cross-cultural communication nuances (Hildén, 2022). To optimize algorithmic recommendations for cross-circulation, three strategies are essential: First, refine algorithm models by incorporating "exploratory recommendations" that introduce slightly divergent yet relevant content, thereby broadening users' exposure to diverse perspectives. Second, enhance cross-cultural data collection and analysis to better understand user preferences across different cultural contexts, reducing communication barriers. Third, implement human moderation to promptly adjust potentially culturally sensitive content, ensuring accurate information delivery across social circles.

In summary, algorithmic recommendation effectively facilitates the breakout and dissemination of short videos by precisely infiltrating initial communities, mining community connection points, leveraging social relationship chains, and employing multi-dimensional content matching. However, it is equally crucial to acknowledge the challenges faced and implement corresponding optimization strategies to better harness the role of algorithms in the international spread of short videos.

3. Research Design and Methods

To address the three research questions raised in the introduction, this paper adopts a research design primarily based on qualitative multiple case studies, combined with literature analysis and secondary data analysis. The overall approach can be summarized as follows: First, construct a four-dimensional analytical framework of "technical architecture—content narrative—dissemination and diffusion—governance mechanisms" based on existing research; Second, select three typical cases—TikTok, Li Ziqi, and the overseas accounts of CCTV News—within this framework, and systematically collect their short video texts and related data from 2019 to 2024; Third, through content analysis, discourse/narrative analysis, and cross-case comparison, identify the common mechanisms and differential pathways through which algorithm-driven narratives enhance the international communication power of China and the construction of national image.

Against the backdrop of the deep interweaving of digital platforms and international communication, how algorithmic narratives drive China's international communication power and national image construction through short videos is essentially a situational issue embedded in specific technological environments and platform practices. Building on the theoretical framework of algorithmic narrative technology architecture, content production, and dissemination diffusion discussed earlier, this paper adopts a research design combining qualitative multi-case studies with literature analysis and secondary data analysis. Through comparative analysis of three typical cases—TikTok, Li Ziqi's short videos, and CCTV News' overseas short video accounts—it reveals the operational mechanisms of algorithmic narratives across different subject types and their differentiated impacts on national image construction.

3.1 Research Paradigm and Overall Design

Rooted in the interpretive research paradigm, this study emphasizes understanding the meaning-making and structural constraints of algorithmic narratives within specific platforms through the lens of participants 'practices and media institutional environments (Flick, 2022; Jensen, 2002). Building on this foundation, it employs a multi-case interpretive research approach following the' theory-case-return-to-theory' cycle.

Through systematic review of literature on international communication, platform research, and algorithmic recommendation, we have identified four analytical dimensions: technical architecture, content narrative, communication diffusion, and governance mechanisms. These dimensions provide a framework for subsequent case studies (Krippendorff, 2018; Yin, 2018).

By examining three representative cases in international communication—TikTok, Li Ziqi, and CCTV News' overseas short-video accounts—we construct a comparative framework analyzing three distinct entities: algorithmic platforms, individual content creators, and mainstream media institutions (Stake, 1995; Eisenhardt, 1989). Through cross-case analysis, we theoretically extract the constituent elements and collaborative pathways of a "culture-sensitive algorithmic narrative system," proposing an optimization framework that combines explanatory power with normative guidance (Denzin, 2017; Miles et al., 2014).

This design not only avoids the limitation of a single case to support structural judgment, but also maintains a thick description and detailed understanding of complex technology-cultural context, which is conducive to the connection between the logic of algorithmic layer and narrative practice, as well as the structure of international public opinion.

3.2 Case Selection: Typical Logic of Platform-Individual-Institution

To ensure the representativeness and generalizability of the analysis, the case selection adhered to three principles: typicality, influence, and data availability (Patton, 2014; Yin, 2018).

The Li Ziqi brand account, with China's traditional rural life and handicrafts as its core narrative, has gained massive attention through overseas platforms such as YouTube. It is a typical case of national image construction through aestheticized narration under the "single creator—global audience" model, suitable for examining how the "shareable China daily life" is symbolized, emotionalized, and landscaped under algorithmic promotion (Braun & Clarke, 2006).

CCTV News 'multilingual accounts on platforms like TikTok and YouTube serve dual purposes: disseminating official information and conducting public diplomacy. These accounts act as pivotal nodes in the tripartite dynamic of' state-platform-audience.' This case study sheds light on how mainstream media leverage algorithmic narratives to shape agendas and articulate values within a regulatory environment and global media competition.

By contrasting three case types across dimensions including subject attributes (platforms/creators/institutions), content formats (entertainment/lifestyle/news), and communication objectives (commercial traffic/personal branding/national image), this comparative analysis comprehensively reveals the differentiated dimensions of algorithmic narratives in various practical contexts (Stake, 1995; Jensen, 2002).

These three case types complement each other in terms of subject attributes (platforms/creators/institutions), content formats (entertainment-oriented, lifestyle-oriented, news-oriented), and communication objectives (commercial traffic, personal branding, national image). They address the core question of this paper: 'How algorithmic narratives participate in national image construction across different subject structures.' Consequently, they establish direct correspondences with the first and second research questions, thereby laying the groundwork for subsequent comparative analysis.

3.3 Data Source and Material Collection

This study primarily utilizes publicly available secondary data, supplemented by systematic textual and interface observations, to establish a multi-source data foundation (Denzin, 2017; Flick, 2022).

By analyzing industry reports and publicly disclosed data from third-party monitoring platforms (including monthly active users, subscriptions, downloads, and engagement metrics), this study maps TikTok's global expansion, analyzes the growth trajectory of Li Ziqi's channel, and evaluates the overseas performance of CCTV News accounts, providing a macro-level quantitative backdrop for case studies.

From 2019 to 2024, this paper adopts a combination of purposive sampling and theoretical sampling to screen representative high-interaction short video samples from TikTok, Li Ziqi's overseas channel, and CCTV News' overseas accounts. Specifically, using play counts, likes, comments, and the presence of obvious China elements (such as China cultural symbols, China scenes, and China narrative subjects) as core indicators, dozens of candidate videos were initially organized in each case. Under the premise of balancing thematic diversity and narrative style differences, approximately 20 videos were ultimately selected as core analytical samples. Meanwhile, by integrating publicly disclosed platform data reports, third-party monitoring statistics, and mainstream media coverage, the macro communication performance and public opinion environment background for each case were constructed.

This study systematically reviews policy documents and authoritative reports on algorithmic recommendation governance, platform regulation, international communication, and national image building, alongside domestic and international mainstream media coverage and analyzes of cases such as TikTok, Li Ziqi, and CCTV News, to provide contextual insights into the platform's institutional environment and global public opinion dynamics. It synthesizes Chinese and English research findings on algorithmic narratives, platform-based governance, international dissemination of short videos, and national image construction, serving as a critical theoretical

resource for developing analytical frameworks and interpreting research findings (Jensen, 2002; Krippendorff, 2018).

The integration of multi-source data helps mitigate biases inherent in single-text materials, enabling comprehensive analysis of platform architecture, content practices, and public opinion feedback on a unified analytical level (Miles et al., 2014).

3.4 Analysis Framework and Operational Path

In the specific analytical process, this paper adopts a three-tiered operational path of 'content analysis—discourse/narrative analysis—cross-case comparison,' integrating algorithmic technical logic with cultural narrative practices. In the first step, during the content analysis phase, based on the aforementioned four-dimensional framework, systematic coding is conducted on the themes, visual symbols, shot organization, subtitles and discourse styles, and interaction metrics of the sample videos to form an initial category system. In the second step, during the discourse/narrative analysis phase, drawing on the thematic analysis method proposed by Braun and Clarke and the critical discourse analysis perspective of Fairclough, the focus is on examining how algorithmic narratives package specific China images as 'visible' and 'clickable' content through recommendation logic, tagging mechanisms, and interaction mechanisms, and how national images are interwoven with individual daily life, global issues, and platform culture in specific narratives. In the third step, during the cross-case comparison phase, three cases are systematically compared according to five dimensions— 'subject type—algorithmic mechanism—narrative strategy—communication effect—governance response'—to extract common mechanisms and divergent paths that can be generalized at the meso-theoretical level, providing an empirical foundation for subsequent discussions on challenges and optimization paths (Fairclough, 2023; Krippendorff, 2018).

Building on content analysis, this study incorporates Braun and Clarke's (2006) thematic analysis approach and Fairclough's (2023) critical discourse analysis framework, with a focused examination of:

How algorithmic narratives package specific China images as "visible" and "clickable" content through recommendation logic, tagging mechanisms, and interaction mechanisms; how short videos internally splice national images with individual lives, global issues, and platform pop culture through shot organization, narrative rhythm, and discourse style; and how international audiences "re-narrate" China images in comments and secondary creations, forming a cycle of amplification or conflict between "algorithm—content—audience." This step focuses on analyzing how algorithmic narratives shape the meaning boundaries and perceptible paths of national images from three aspects: language, visuals, and platform functions (Fairclough, 2023; Jensen, 2002).

Finally, we conduct a cross-case comparison of three cases—TikTok, Li Ziqi, and CCTV News—across five dimensions: "subject type, algorithmic mechanism, narrative strategy, communication effect, and governance response" (Eisenhardt, 1989; Yin, 2018). The key points of comparison include:

The agenda-setting ability and visibility structure of different subjects on the algorithm platform; the difference of national image narrative in the path of entertainment, lifestyle and news; the bias and constraint of algorithm recommendation in different institutional environments and public opinion field.

On this basis, the core elements and collaborative pathways of the "culture-sensitive algorithmic narrative system" are summarized, namely, through technological optimization, content innovation, and multi-party linkage of "government-platform-audience", to alleviate algorithmic bias and information cocoon issues, and enhance China's discourse visibility and image construction capabilities in the global short video ecosystem.

3.5 Reliability, Validity and Limitations

Given that this study primarily employs qualitative multi-case and secondary data analysis, methodological reflection is warranted from three dimensions: credibility, validity, and transferability (Lincoln & Guba, 1985; Miles et al., 2014).

Tripartite data validation: Cross-verify key judgments through multiple sources including platform data, short video transcripts, media reports, and policy documents to mitigate biases from single-source data (Denzin, 2017). Transparent research processes: Clearly articulate case selection logic, sample screening criteria, and operational procedures for coding, categorization, and comparison. Preserve coding categories and analytical memos to enhance research auditability (Miles et al., 2014; Yin, 2018). Peer review and logical validation: Refine analytical frameworks and case interpretations through iterative revisions guided by feedback from fellow researchers in the field to strengthen interpretive robustness.

This study does not primarily aim at statistical inference, but rather seeks to capture the deep mechanisms and structural contradictions of algorithm-driven short video international communication through thick description and cross-case comparison, thereby providing a contextualized meso-theory for understanding national image construction in the platform era (Stake, 1995; Jensen, 2002).

Overall, this study provides an operational analytical framework for understanding how algorithmic narratives reshape China's international communication power and national image in the short video field through a clear

multi-case study design, systematic textual and discursive analysis approach, and triangulation of multi-source data. It also lays the foundation for subsequent large-scale quantitative research and mixed-method studies.

4. Case Analysis: Algorithm-driven Narrative as a Success Model for Short Videos

Based on the analytical framework of 'technical architecture—content narrative—dissemination—governance mechanism' constructed in the previous section, this section conducts a comparative analysis of three typical cases: TikTok, Li Ziqi's short videos, and CCTV News' overseas short video accounts, to address RQ1 and RQ2. Through a comprehensive examination of representative high-interaction short video samples and related platform data from 2019 to 2024, as well as media reports, we can more concretely observe how algorithmic narratives operate across different types of entities and their differential impacts on the construction of China's national image. The following analysis will be conducted from three dimensions: algorithmic mechanisms, narrative strategies, and dissemination effects, aiming to distill generalizable insights and lessons from detailed practical observations.

4.1 Case 1: TikTok's Global Impact

TikTok, a short video platform originating from China, has achieved tremendous success worldwide, becoming a typical case of algorithm-driven short videos enhancing China's international communication power.
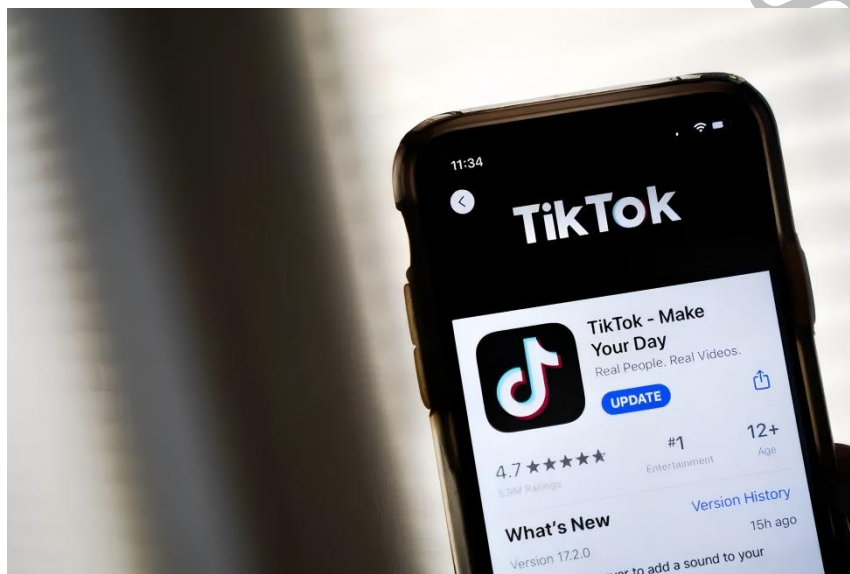

Figure 1: TikTok

Taking TikTok as an example, its "Recommended for You" page heavily relies on algorithms for content curation. According to platform data and third-party statistics, TikTok has over a billion monthly active users in more than 150 countries and regions worldwide, with users aged 18-34 accounting for over 60%. This user structure determines that the platform tends to attract young audiences with entertaining, fragmented short videos in content recommendations. Based on the samples collected in this article, it can be seen that highly interactive videos related to China often highlight distinct China symbols (such as city landmarks and traditional festival scenes) in their visual composition, adopt strong rhythmic music and fast editing in narrative pacing, and embed platform popular culture through mechanisms like challenges and hashtags. This indicates that, driven by algorithmic storytelling, the presentation of China's national image is not simply a pile-up of information but is reconstructed into a "consumable landscape" that combines visual impact and emotional appeal (Bhandari & Bimo, 2022; Jiang & Ma, 2024).

TikTok employs a unique algorithmic narrative system to deliver personalized content recommendations. Its algorithm analyzes real-time user behavior data—including viewing history, likes, comments, shares, as well as multi-dimensional metrics like device information, geographic location, and usage time—to identify user preferences. By building precise user profiles, the platform curates short videos that align with individual interests (Bhandari & Bimo, 2022). For instance, users who frequently watch basketball match videos and like NBA-related content will receive priority recommendations for the latest NBA highlights, daily training routines of star players, and lifestyle content. This personalized recommendation system significantly enhances user-content alignment, thereby boosting user engagement and retention.

TikTok's algorithm also emphasizes the diversity and innovation of content, encouraging users to create and share various types of high-quality short videos. Many popular short videos featuring China elements have

emerged on the platform, such as traditional Chinese martial arts, opera, paper-cutting, and food preparation. These short videos, recommended by the algorithm, quickly spread worldwide, attracting the attention and affection of a large number of international users. For example, a short video showcasing traditional Chinese martial arts Tai Chi has received over 10 million views and 5 million likes on TikTok (M. Zhang & Liu, 2021). Many foreign users expressed amazement and admiration for Chinese martial arts in the comments, stating that they gained a deeper understanding of Chinese culture through these short videos. The widespread dissemination of these short videos with China elements on TikTok not only enriches the platform's content ecosystem but also provides new channels for the international spread of Chinese culture, enhancing its global recognition and influence. Figure 1 shows the growth trend of TikTok's global monthly active users (unit: billion):
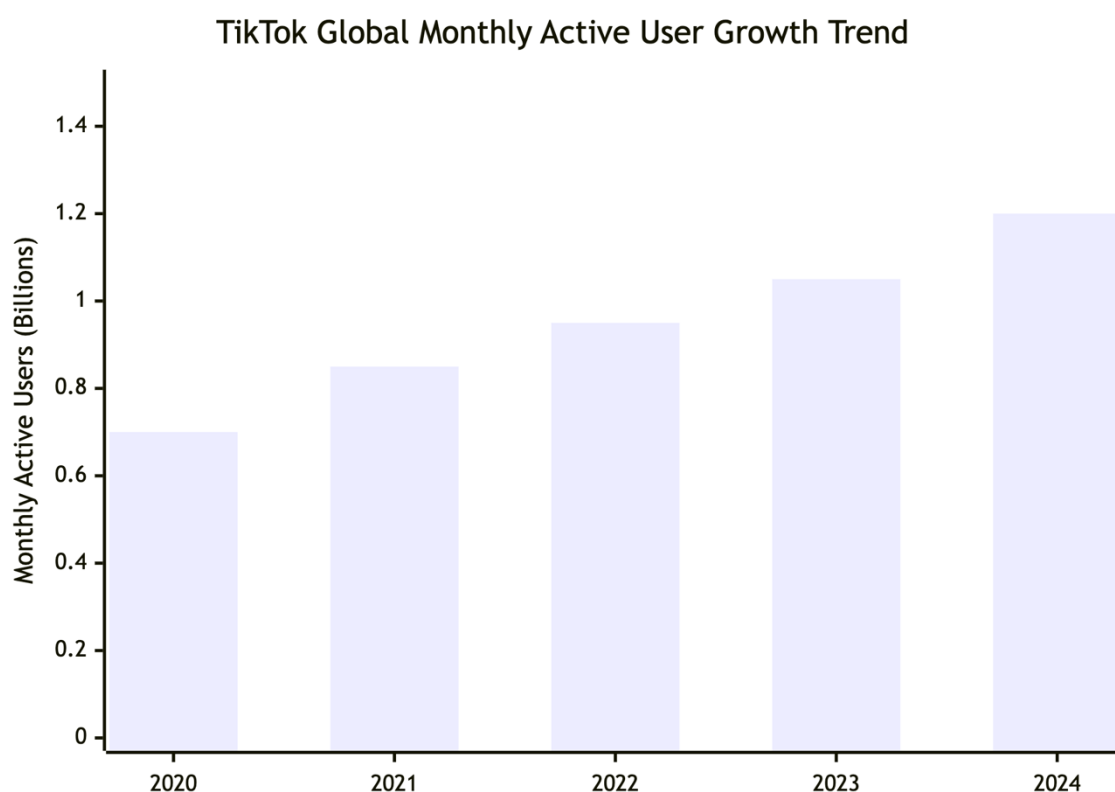

Figure 2: TikTok's Global Monthly Active Users Growth Trend

4.2 Case 2: International Communication of Li Ziqi's Short Videos

Li Ziqi's short videos, themed on China's traditional rural life, have gained widespread attention and affection internationally through exquisite visuals, delicate emotional expressions, and unique cultural elements, becoming an important representative of China's national image construction.

Li Ziqi's short videos cover a wide range of topics, including food preparation, traditional handicrafts, and rural life. In terms of food preparation, she showcases traditional delicacies from various regions of China, such as Sichuan hot pot, Beijing roast duck, and Yangzhou fried rice, detailing the cooking process and the cultural significance behind them. Regarding traditional handicrafts, she explores various skills like embroidery, bamboo weaving, and woodworking, highlighting the exquisite craftsmanship and unique charm of Chinese traditional crafts. In the realm of rural life, she depicts scenes of China's countryside, including the four seasons, farming activities, and family life, creating a serene, harmonious, and beautiful atmosphere of pastoral living. For example, in her short videos on traditional embroidery, every step from material selection, design, and stitching techniques to the final product is meticulously presented, allowing international audiences to appreciate the beauty and uniqueness of Chinese embroidery.

The dissemination of Li Ziqi's short videos primarily occurs through social media platforms, especially YouTube. As of December 2024, her YouTube subscribers have exceeded 20 million, with total video views surpassing 5 billion. The spread of her videos exhibits the following characteristics: First, algorithmic recommendations, where YouTube delivers Li Ziqi's short videos to users interested in China culture, rural life, and cuisine based on their preferences and viewing history. Second, user-generated sharing, where many

international users, captivated by her content after watching her videos, actively share them on their social media accounts, further expanding the reach of the videos. Third, media coverage and recommendations, as some international media outlets have reported on and promoted Li Ziqi's short videos, enhancing their visibility and influence (C. Zhang & Liu, 2025).
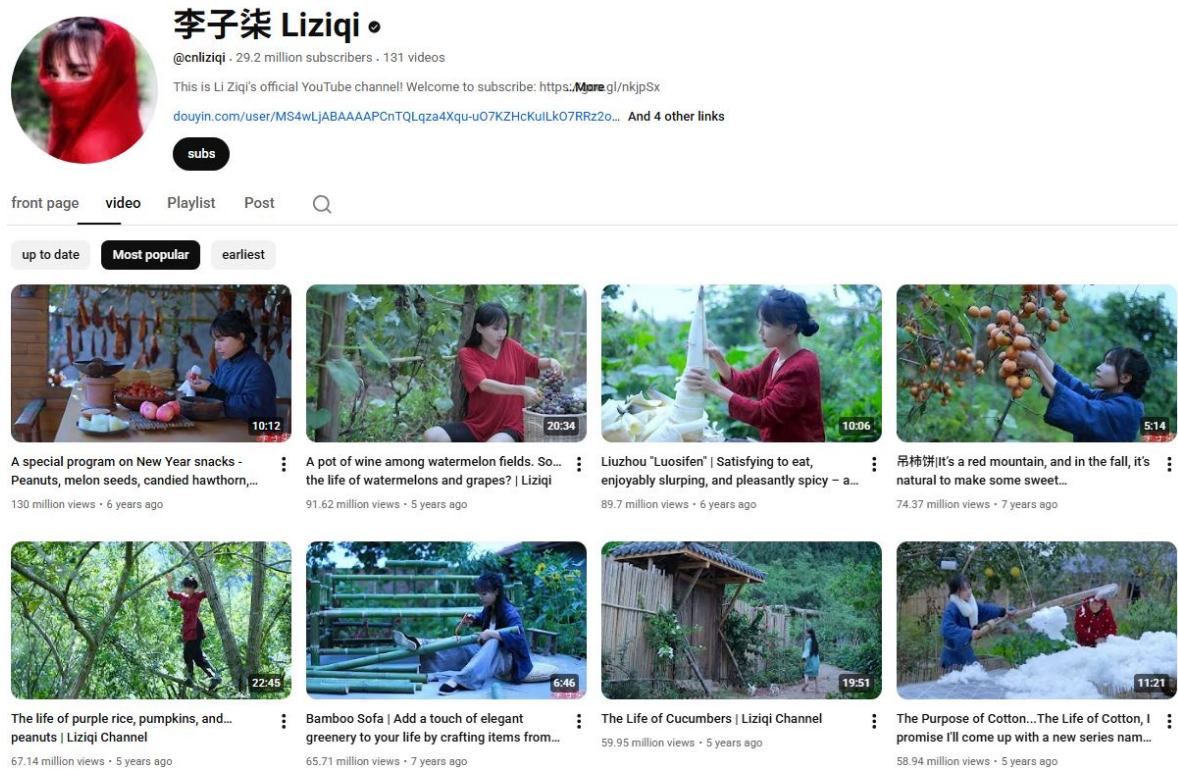

Figure 3: Li Ziqi's YouTube channel

Li Ziqi's short videos have made significant contributions to the construction of China's national image (Whyke et al., 2022). Firstly, they showcase the charm of China's traditional culture, allowing international audiences to understand the depth and richness of China's traditional culture through content such as cuisine and handicrafts, thereby enhancing the appeal and sense of identity of China's culture. Secondly, they shape a beautiful image of China's countryside, displaying the picturesque landscapes, harmonious life, and achievements of rural revitalization in China, which has changed the international community's stereotypical views of China's countryside. Thirdly, they convey China's values, such as diligence, kindness, harmony, and nature, allowing international audiences to feel the spiritual demeanor and value pursuits of the Chinese people. As one foreign netizen commented: "Li Ziqi's videos have shown me a real and beautiful China, and I am filled with admiration for China's culture." Figure 2 shows the changes in Li Ziqi's YouTube subscribers (unit: ten thousand).
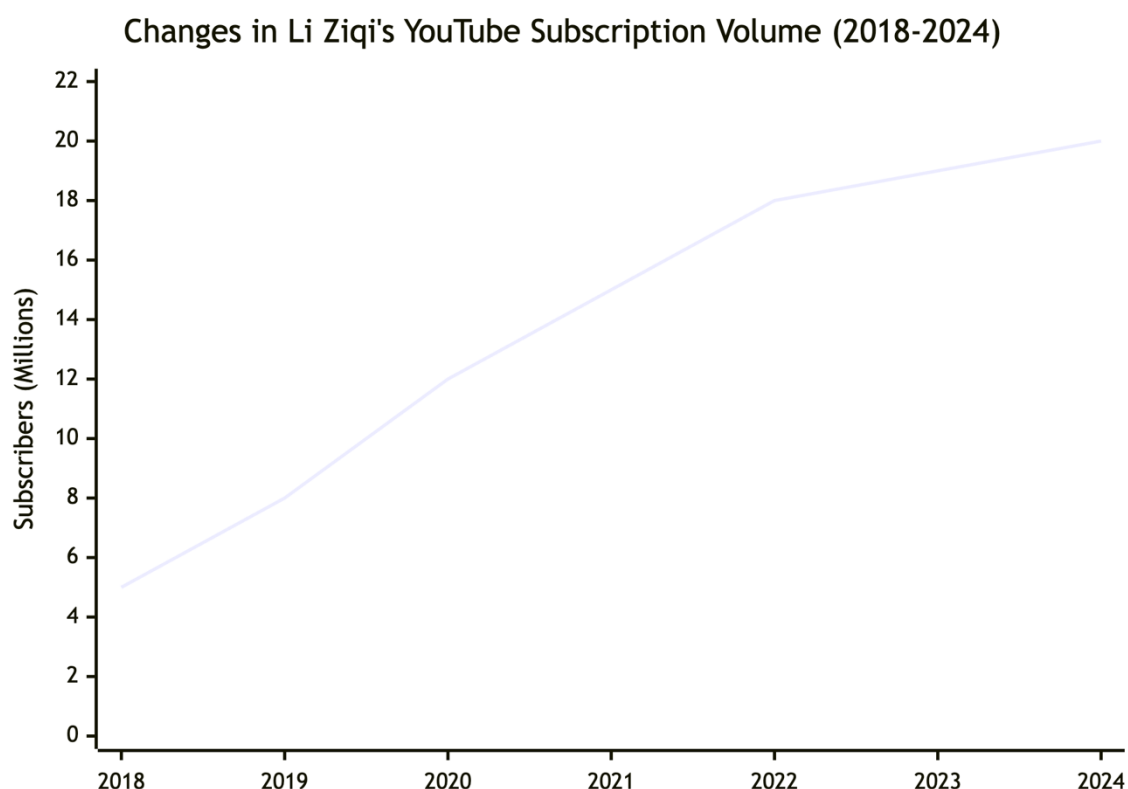
Changes in Li Ziqi's YouTube Subscription Volume (2018-2024)

Figure 4: Changes in Li Ziqi's YouTube subscribers

4.3 Case 3: International Expression of CCTV News Short Videos

CCTV News has actively explored the field of short videos, achieving remarkable dissemination effects on overseas platforms through innovative content and effective algorithmic recommendations, providing new ideas and methods for China's international communication.

CCTV News publishes content on overseas short video platforms covering multiple fields such as news information, cultural exchange, and international cooperation. In terms of news information, it timely reports on major domestic and international events and hot topics, such as international politics, economic developments, and natural disasters, providing authoritative and accurate information to overseas users. In terms of cultural exchange, it has launched a series of short videos introducing China's traditional and modern cultures, such as traditional Chinese festivals, cultural heritage, and contemporary art, promoting cultural exchange and mutual learning between China and other countries. In terms of international cooperation, it reports on China's active participation and contributions in international affairs, such as the "Belt and Road" initiative and international aid, showcasing China's sense of responsibility as a major country. For example, during the "Belt and Road" International Cooperation Summit Forum, CCTV News released a series of short videos introducing the background, achievements, and future development direction of the "Belt and Road" initiative, which received widespread attention from overseas users (J. Zhao & Zhang, 2024).
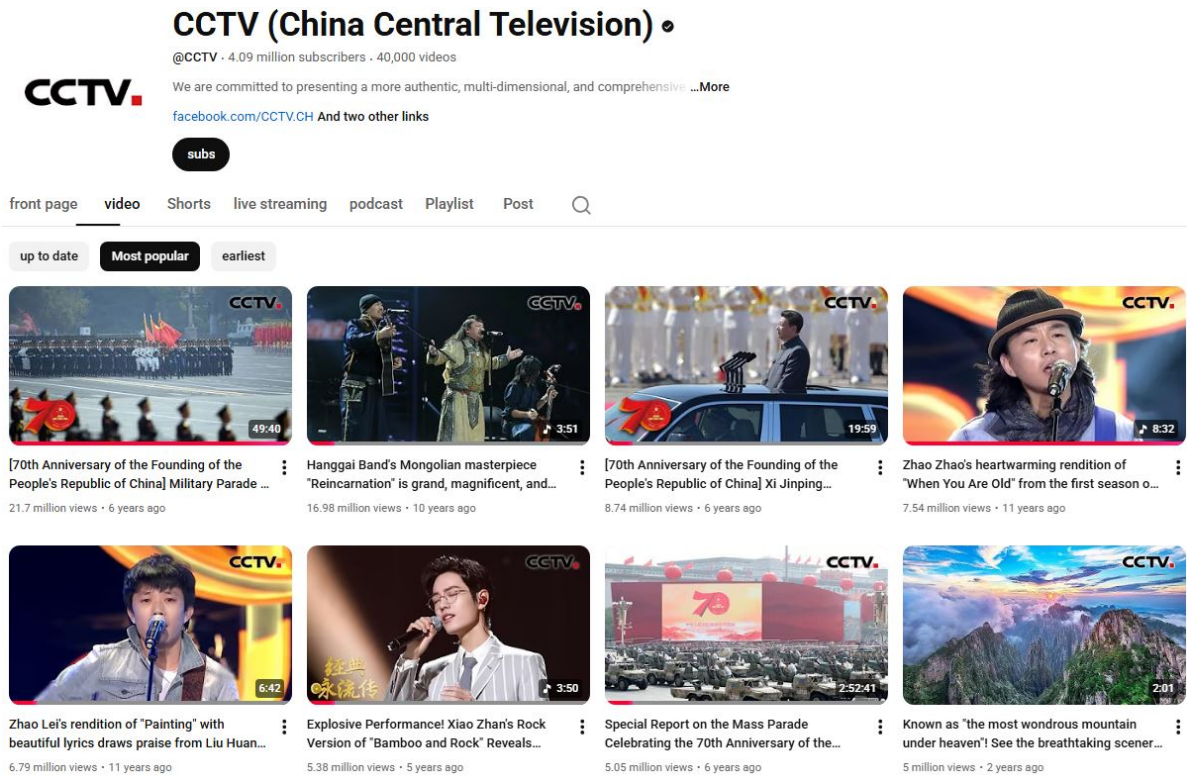
Figure 5: CCTV 's YouTube channel

CCTV News uses algorithmic recommendations to accurately deliver short videos to overseas users. Overseas platforms leverage their own algorithmic systems to provide personalized recommendations for CCTV News 'short videos based on factors such as users' interests, preferences, geographical location, and language (Meng, 2021). For example, for American users interested in international politics, the platform recommends CCTV News 'reports on international political hotspots; for European users interested in China's culture, it recommends short videos introducing China's traditional culture. CCTV News also actively collaborates with overseas platforms to optimize recommendation strategies, enhancing the exposure and dissemination of short videos.

CCTV News 'short videos have achieved remarkable success on overseas platforms, earning widespread acclaim from international audiences. Analysis of the CCTV China Central Television account's YouTube content reveals that 78 videos have surpassed 1 million views, with "The 70th Anniversary of the Founding of the People's Republic of China: Military Parade Formation" leading the pack at 21.69 million views. The video "Yaya Returns Safely to Beijing Zoo! The Bamboo-Encircled' Yaya' Clearly Gained Weight, But Her Heart Warms!" garnered 620,000 likes. Figure 3 displays the top five news interactions by view and like on YouTube for the CCTV News account (unit: 10,000):

Table 1. Top 5 News Interactive Data of Short Videos by Play and Like on YouTube by CCTV News Accounts

date of issue	theme of news	amount of play	date of issue	theme of news	Like count
2019.10.1	70th anniversary of the founding of the People's Republic of China Military parade | 2019 military parade	2169	2025.4.8	What a spectacular sight! I got to experience the Three Gorges Dam's sluice gate operation and water storage up close.	47
2015.3.10	Hangge Band's Mongolian masterpiece' Reincarnation 'is a breathtakingly grand and electrifying track. Liu Huan is absolutely in awe! Cai Jianya's jaw is dropping again!	1696	2023.5.29	Yaya safely returns to Beijing Zoo! Surrounded by bamboo, Yaya is visibly plumper, and it warms my heart!	62

2019.10.1	[70th Anniversary of the Founding of the People's Republic of China] Xi Jinping Inspects the Military Units in the Parade	873	2025.4.22	Absolutely stunning! The night view of Tianmen Mountain lit up for a moment, looking like a fairyland!	34
2014.3.11	China Good Songs Season 1 "When You Are Old" Zhao Zhao's heartwarming singing moves the golden song (Cai Jianya Group)	753	2019.10.1	70th anniversary of the founding of the People's Republic of China Military parade | 2019 military parade	19
2014.1.24	Zhao Lei's "Painting" with the most beautiful lyrics makes Liu Huan praise (Liu Huan Group)	678	2025.8.25	The third comprehensive rehearsal for the ceremony commemorating the 80th anniversary of the victory of the Chinese People's War of Resistance Against Japanese Aggression and the World Anti-Fascist War has been successfully concluded.	6.5

5. Realistic Challenges and Constraints Driven by Algorithmic Narration

By comparing three cases—TikTok, Li Ziqi, and the overseas accounts of CCTV News—it can be observed that algorithmic narratives demonstrate significant advantages in enhancing China's international communication power and national image construction, while also exposing a series of structural tensions. These issues are not isolated phenomena in individual cases but rather common challenges permeating platform infrastructure, content production mechanisms, and the international regulatory environment. Based on the preceding analysis, this paper summarizes them into three major aspects: the technical dimension of algorithmic black boxes and recommendation biases', the content dimension of' cultural adaptation and symbolic misinterpretation', and the institutional dimension of' platform governance and international regulatory constraints.' The following discussion will elaborate on these three dimensions to provide a problem-oriented approach for constructing subsequent collaborative optimization pathways.

5.1 Technical aspects: algorithm black box and recommendation bias

The algorithmic black box refers to the phenomenon where the decision-making process and internal mechanisms of an algorithm are difficult to fully understand and explain. In the international dissemination of short videos, the algorithmic black box makes it challenging for disseminators to accurately know how the algorithm screens and recommends short videos, which poses difficulties in controlling the dissemination effect (Vombatkere et al., 2024). For example, TikTok's algorithm involves complex machine learning models and massive data processing when recommending short videos, but the specific details and weight distribution of the algorithm are often opaque, making it impossible for short video creators and disseminators to accurately understand why their videos are recommended or not. This opacity may result in some high-quality short videos failing to gain widespread dissemination due to the algorithm's "misjudgment," thereby affecting the comprehensive presentation of China's national image.

Algorithmic recommendation bias is also a problem that cannot be ignored. Since algorithms are trained and learned based on data, if the training data is biased or incomplete, it may lead to algorithmic recommendations being biased. This bias may manifest as excessive or neglectful recommendations of short videos from certain regions, cultures, or themes, thereby affecting the dissemination of China's national image across different regions and groups (Cakmak et al., 2024). For example, on some Western short video platforms, algorithms may be influenced by Western values and ideologies, selectively recommending short video content from China, showing more negative information about China while recommending less positive content such as China's development achievements and cultural charm. This can lead to a one-sided perception of China among international audiences, which is detrimental to the shaping of China's national image.

To address these challenges, a series of measures must be implemented. On one hand, efforts should focus on enhancing research into algorithm transparency and explainability. Developers should be required to disclose the fundamental principles and operational mechanisms of their algorithms, enabling both disseminators and audiences to better understand the decision-making processes. For instance, the EU's General Data Protection Regulation (GDPR) mandates that data controllers provide data subjects with information regarding algorithmic decisions, including their logic, implications, and expected outcomes(Selbst & Powles, 2018). On the other hand, optimizing training datasets is crucial to ensure diversity and representativeness, thereby reducing the impact of data bias on algorithmic recommendations. This can be achieved through multi-channel data collection, rigorous data cleansing

and filtering, and human review processes to improve data quality. Additionally, fairness evaluation metrics should be adopted to assess and refine algorithms, ensuring they avoid discriminatory outcomes in recommendation systems (Jui & Rivas, 2024).

5.2 Content Level: Cultural Adaptation and Misreading of Symbols

In the international dissemination of short videos, cultural adaptation is a key issue. There are differences in cultural backgrounds, values, and esthetic concepts across different countries and regions, which may lead to cultural barriers for China's short video content in international communication. For example, some traditional Chinese cultural elements, such as Peking Opera, martial arts, and calligraphy, may be difficult for international audiences unfamiliar with Chinese culture to understand and accept. If short video content fails to adequately consider these cultural differences and implement effective cultural adaptation, it may fail to resonate with international audiences or even cause misunderstandings. For instance, in some short videos introducing traditional Chinese festivals, if they merely showcase the superficial forms of the festivals without delving into the cultural connotations and meanings behind them, international audiences may only see the lively scenes but fail to truly understand the values embedded in traditional Chinese festivals, such as family reunions and cultural inheritance.

Symbolic misinterpretation is also a common issue. Various symbols used in short videos, such as language, images, and music, all carry specific cultural meanings. However, due to differences in cultural backgrounds, international audiences may misinterpret these symbols (H. Zhang & Wei, 2024). For example, in China, red is typically associated with joy and auspiciousness, but in some Western countries, it may be linked to danger or warnings. If red elements are heavily used in short videos without proper explanation and guidance, it could lead to misunderstandings among Western audiences. Similarly, internet slang used in some Chinese short videos may be completely incomprehensible to international audiences unfamiliar with Chinese internet culture, thereby affecting the dissemination of the content.

To achieve cultural adaptation and enhance the international dissemination effect of short video content, efforts should be made from multiple aspects. First, it is essential to deeply understand the cultural background and needs of the target audience, and create and disseminate short video content in a targeted manner based on the characteristics of different regions and groups. This can be achieved through market research and user data analysis to identify the interests and concerns of international audiences, combining China's cultural elements with the needs of international audiences to produce more engaging short videos. Second, adopt an internationalized approach by using concise, clear, and easily understandable language and visuals, minimizing the use of cultural symbols or providing detailed explanations to avoid misinterpretation by international audiences. For example, when introducing China's traditional culture, animations and stories can be used to transform abstract cultural concepts into vivid and relatable content, making it easier for international audiences to understand. Third, strengthen interaction and communication with international audiences, promptly gather their feedback and opinions, and adjust the content and dissemination strategies of short videos based on the feedback to enhance their sense of participation and identification (Hu et al., 2024; M. Wang, 2025).

5.3 Institutional Level: Platform Governance and International Regulatory Constraints

Platform governance is an important institutional factor influencing the international dissemination of short videos driven by algorithmic narratives. Different short video platforms have varying governance rules and policies, which directly impact the spread of short videos. For example, some international short video platforms have strict content review standards, often restricting or deleting content involving political sensitivity, religious beliefs, violence, or pornography. This requires China's short video creators and disseminators to strictly adhere to the platform's rules and policies when producing and publishing short videos, avoiding content violations that could hinder dissemination. However, due to differences in rules and policies across platforms, this also adds a certain level of complexity and difficulty to the international dissemination of China's short videos.

International regulatory constraints also have a significant impact on the international dissemination of short videos. As the international spread of short videos becomes increasingly widespread, the international community's regulation of short videos has become more stringent. Some countries and regions have introduced relevant laws and regulations to standardize and constrain aspects such as content, data privacy, and intellectual property rights of short videos. For example, the EU's Digital Markets Act strictly regulates the market behavior of large digital platforms, requiring them to follow certain rules in areas such as content recommendation and data processing(Canepa et al., 2025). This requires China's short video platforms to fully understand and comply with local laws and regulations when expanding overseas, actively addressing the challenges of international regulation. At the same time, China also needs to strengthen communication and cooperation with the international community, participate in the formulation of international rules, and strive for a more favorable international environment for the international dissemination of China's short videos.

To address the challenges posed by platform governance and international regulatory constraints, China needs to strengthen its own platform construction and management, and establish and improve relevant laws, regulations, and policy systems. On the one hand, domestic short video platforms should be guided to improve governance mechanisms, enhance content review, user management, and data security, and improve the operational level and service quality of the platforms. On the other hand, it is necessary to accelerate the formulation and improvement of relevant laws and regulations to standardize the production, dissemination, and consumption of short videos, ensuring the healthy development of the short video industry. At the same time, China should also actively participate in the formulation and coordination of international rules, strengthen exchanges and cooperation with other countries in the field of short videos, and jointly promote the healthy and orderly development of the international dissemination of short videos.

6. Collaborative Optimization Path: Constructing a Culture-Sensitive Algorithmic Narrative System

To address the three challenges of technology, content, and institutional frameworks identified earlier, this paper proposes future-oriented optimization strategies through three dimensions: technological enhancement, content innovation, and collaborative mechanisms among government, platforms, and audiences, thereby responding to Research Question 3 (RQ3). It is important to emphasize that the following discussion is not an abstract proposal divorced from empirical evidence, but rather a summative response based on comparative analysis and problem identification of the three prior cases. The aim is to explore feasible improvement directions within the constraints of existing platform practices.

6.1 Technology Optimization: Development of Cultural Adaptation Algorithm

Algorithms play a crucial role in the international dissemination of short videos. However, some existing issues with algorithms, such as potential biases and information 茧房 effects, have negatively impacted both global communication and national image.

Algorithmic bias may stem from the bias of training data, unreasonable algorithm design, and human intervention. In the international dissemination of short videos, algorithmic bias can lead to uneven content recommendations for certain countries or regions, resulting in unfair screening and recommendation of short video content from China (Ibrahim et al., 2023). For example, the algorithms of some Western short video platforms may be influenced by their own values and ideologies, leading to fewer positive content recommendations for China while overexposing negative content. This algorithmic bias makes it difficult for international audiences to comprehensively and objectively understand China, hindering the shaping of China's national image. Studies show that mainstream Western platforms, leveraging their algorithmic dominance, systematically suppress the dissemination of China-related content through content filtering, de-prioritization, and labeling, thereby weakening China's influence in the international public sphere. This not only marginalizes positive narratives about China's technological innovation and social governance but also prevents China's image from being fully and multidimensionally presented in the global public discourse(Bradshaw, 2024).

The problem of information cocoons arises because algorithms personalize recommendations based on users'interests and preferences, leading users to only encounter content that aligns with their views and interests, thus trapping them in a closed information space. In the international dissemination of short videos, information cocoons limit international audiences' understanding of China to specific fields and perspectives, making it difficult for them to access China's multicultural diversity and developmental achievements (Park & Park, 2024). For example, some international users interested in China's traditional culture may, due to algorithmic recommendations, only see one aspect of China's traditional culture while lacking knowledge about areas such as modern technology and economic development. This is detrimental to the comprehensive presentation of China's national image and can easily lead to misunderstandings and biases.

To address these challenges, developing culturally adaptive algorithms has become imperative. Such algorithms must thoroughly consider the cultural contexts, values, and esthetic preferences of different countries and regions to ensure fairer and more comprehensive short video recommendations. During the algorithm design process, multi-dimensional cultural data—including cultural values, historical traditions, and social customs—should be incorporated as decision-making references. By conducting in-depth research on cultural characteristics across nations and regions, we can establish cultural feature models and integrate them into the algorithm. This enables the system to recommend suitable short video content based on users' cultural backgrounds.

The cultural adaptation algorithm should maintain dynamic adjustment capabilities to continuously optimize recommendation strategies based on user feedback and new data. When international users show disinterest or raise concerns about recommended short video content, the algorithm must promptly analyze the reasons and adjust recommendations to enhance user satisfaction and engagement. Additionally, the algorithm should stay

attuned to global cultural trends and trending topics, making timely adjustments to ensure short video content aligns with international cultural currents.

6.2 Content Innovation: Constructing a Multi-dimensional Narrative Matrix

The current uneven quality of short video content and the communication barriers caused by cultural differences have seriously affected the effectiveness of China's short videos in international communication and the construction of national image.

The uneven quality of short video content is a prominent issue. Among the vast amount of short video content, there are numerous vulgar, false, and plagiarized works. These contents not only fail to convey the positive image of China but also damage the national image of China. For example, some short videos, in pursuit of traffic, spread lowbrow content such as parody and vulgar performances, leading international audiences to misunderstand Chinese culture. Moreover, some short video content lacks depth and substance, merely presenting superficial displays that fail to allow international audiences to truly understand the cultural heritage and developmental achievements of China. Some short videos introducing Chinese cuisine only showcase the preparation process without delving into the cultural significance and historical origins behind the food, making it difficult for international audiences to appreciate the richness and depth of Chinese culinary culture.

Cultural differences also pose a major challenge to the international dissemination of short videos. The significant variations in cultural backgrounds, values, and esthetic concepts across different countries and regions make it easy for China's short videos to encounter cultural misunderstandings and conflicts in global communication. For instance, some traditional cultural elements of China, such as Confucianism and Taoism, may be difficult for international audiences unfamiliar with Chinese culture to understand and accept. Some short videos fail to provide appropriate explanations and adaptations when disseminating these cultural elements, leading to misunderstandings about Chinese culture among international audiences. Similarly, certain humorous approaches and expressions in China may not be understood in international cultures, thereby affecting the effectiveness of short video dissemination (Y. S. D. Zhang & Noels, 2024).

To build a multi-dimensional narrative matrix and improve the quality of short video content, efforts need to be made from multiple aspects. First, strengthen content moderation by establishing strict standards to eliminate the spread of vulgar, false, or plagiarized content. Short video platforms should intensify moderation efforts, combining artificial intelligence technology with human review to comprehensively examine uploaded videos, ensuring content quality and legality. Second, encourage high-quality content creation by providing creative guidance and financial support to stimulate creators 'enthusiasm and creativity, promoting the production of high-quality short videos. Short video creation competitions can be held with awards to encourage creators to produce works with depth, substance, and international influence. Third, emphasize cultural integration by incorporating diverse cultural elements into short video content to meet the needs of different international audiences. For example, combining China's traditional martial arts with modern street dance can create short videos with a contemporary feel and international appeal. By blending China's traditional martial arts with modern street dance, unique short videos can be produced that showcase the charm of Chinese martial arts while attracting the attention of young people worldwide. Fourth, adopt diverse narrative approaches such as storytelling, emotional storytelling, and science communication to meet the needs of different audiences. By telling vivid stories, international audiences can be emotionally resonated with; by sharing China's cultural knowledge and development achievements, their understanding and recognition can be enhanced.

6.3 Mechanism Coordination: The Interactive Framework of "Government-Platform-Audience"

The complex international public opinion environment and regulatory policies pose severe challenges to the international dissemination of short videos. It is necessary to build an interactive framework of "government-platform-public" and strengthen the cooperation among the three parties to cope with these challenges.

The international public opinion environment is becoming increasingly complex, with some Western countries harboring prejudice and misunderstanding toward China, and engaging in smear campaigns and attacks against China through various channels. In the international dissemination of short videos, such negative public opinion may affect the acceptance and trust of international audiences towards Chinese short videos. Some Western media often report on China with bias, distorting facts, which leads to negative impressions of China among international audiences. When these international audiences see Chinese short videos, they may be influenced by preconceptions and hold skeptical attitudes towards the content. Meanwhile, regulatory policies vary across different countries and regions, posing challenges to the operation and content dissemination of short video platforms. Some countries have very strict review standards for short video content, imposing numerous restrictions on content involving politics, religion, and culture, which hinders the spread of Chinese short videos in these countries. For example, certain countries restrict or delete short videos containing Chinese political elements, affecting the dissemination of China's national image in these regions (Tai, 2014).

To address these challenges, the government should play a guiding and regulatory role. The government can formulate relevant policies to encourage short video platforms to actively engage in international communication and enhance the image of China. By establishing special funds, the government can support short video platforms in expanding overseas markets and promoting China's excellent culture and development achievements. The government should strengthen the supervision of short video content to ensure it complies with national laws and regulations as well as the requirements of international communication. A sound content review mechanism should be established to strictly review and handle short videos involving sensitive information or negative values. The government should also enhance international cooperation, communicate and coordinate with governments of other countries and regions to jointly address challenges in international public opinion and promote the healthy development of international short video communication. This can be achieved through events such as international media forums and cultural exchange activities, which will foster mutual understanding and trust with other countries and create a favorable international environment for the international communication of Chinese short videos.

Short video platforms should assume primary responsibility and strengthen their own development and management. Platforms need to optimize algorithm recommendation mechanisms to improve the accuracy and fairness of recommendations, avoiding algorithmic bias and the emergence of information cocoons. By continuously improving algorithm models and incorporating considerations of cultural diversity, they can ensure that China's short videos reach a wider international audience. Platforms should enhance content management, improve content quality, and actively spread positive energy. They should establish content screening and recommendation standards, prioritizing short video content with cultural value, artistic value, and international influence. Additionally, platforms should strengthen interaction with audiences, promptly understand their needs and feedback, and adjust content and recommendation strategies based on feedback. By setting up user comment sections and conducting surveys, they can collect audience opinions and suggestions, continuously improving user experience.

Audiences also play a significant role in the international dissemination of short videos. Audience feedback and participation can influence the effectiveness of short video dissemination and the construction of national image. Positive evaluations and sharing by international audiences can expand the reach of China's short videos and enhance China's national image. Therefore, it is essential to pay attention to the needs and opinions of the audience and strengthen interaction and communication with them. Channels such as social media and online forums can be used to engage with international audiences, address their questions, and respond to their concerns. Encourage audience participation in the creation and dissemination of short videos, inviting them to share their views and experiences about China, thereby enhancing their sense of involvement and identification. By establishing an interactive framework of "government-platform-audience," collaborative efforts among the three parties can be achieved to jointly promote the international dissemination of short videos and improve China's international communication capabilities and the level of national image construction.

This study has several limitations and implications for future research. First, the algorithmic black box constraint: The research primarily relies on platform performance metrics and public data, making it impossible to directly access the internal parameter settings of recommendation algorithms. Inferences can only be made indirectly through observable phenomena and outcomes. Second, the scope limitation of case studies: While the three case types are representative, they cannot fully encompass all short video practices. Particularly, the role of small and medium creators and grassroots accounts in national image construction requires further exploration. Finally, the audience perspective deficiency: The analysis focuses on platform and content production aspects, lacking systematic empirical evidence on international audiences' reception experiences and meaning construction. Future studies should supplement this through methods like questionnaires, interviews, or digital ethnography (Flick, 2022; Patton, 2014).

Author Contribution Statement

Zhang Zihao and Li Jiaying were responsible for study design and revising. Xie Wanzi was responsible for data collection. He Yilin drafted the manuscript and Liu Zichun revised it. In this study, a new teacher named Liu Zichun has been added, who participated in the writing of this article. All authors read and approved the final manuscript.

References

1. Jiang, Q., & Ma, L. (2024). Swiping more, thinking less: Using TikTok hinders analytic thinking. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *18*(3).

2. Bhandari, A., & Bimo, S. (2022). Why's everyone on TikTok now? The algorithmized self and the future of self-making on social media. *Social media+ society*, *8*(1), 20563051221086241.

3. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

4. Cai, Y., & Wang, F. (2024, June). Exploring the Behavior of Users "Training" Douyin's Personalized Recommendation Algorithm System in China. In *International Conference on Human-Computer Interaction* (pp. 189-208). Cham: Springer Nature Switzerland.

5. Cakmak, M. C., Agarwal, N., & Oni, R. (2024). The bias beneath: analyzing drift in YouTube's algorithmic recommendations. *Social Network Analysis and Mining*, *14*(1), 171.

6. Denzin, N. K. (2017). *The research act: A theoretical introduction to sociological methods*. Routledge.

7. Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, *14*(4), 532-550.

8. Fairclough, N. (2023). Critical discourse analysis. In *The Routledge handbook of discourse analysis* (pp. 11-22). Routledge.

9. Flick, U. (2022). An introduction to qualitative research.

10. Gao, Y., Liu, F., & Gao, L. (2023). Echo chamber effects on short video platforms. *Scientific Reports*, *13*(1), 6282.

11. Grusauskaite, K., Carbone, L., Harambam, J., & Aupers, S. (2024). Debating (in) echo chambers: How culture shapes communication in conspiracy theory networks on YouTube. *New Media & Society*, *26*(12), 7037-7057.

12. Hildén, J. (2022). The public service approach to recommender systems: Filtering to cultivate. *Television & New Media, 23(7),* 777–796.

13. Hu, F., Kostiuk, S. A., Xi, Z., Zhu, Y., & Lin, J. (2024). On The Dilemma and Countermeasures of Intercultural Communication of Chinese National Image in The Context of New Media. *Traduction et Langues*, *23*(3), 38-56.

14. Ibrahim, H., AlDahoul, N., Lee, S., Rahwan, T., & Zaki, Y. (2023). YouTube's recommendation algorithm is left-leaning in the United States. *PNAS nexus*, *2*(8), pgad264.

15. Jui, T. D., & Rivas, P. (2024). Fairness issues, current approaches, and challenges in machine learning models. *International Journal of Machine Learning and Cybernetics*, *15*(8), 3095-3125.

16. Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.

17. Lee, A. Y., Mieczkowski, H., Ellison, N. B., & Hancock, J. T. (2022). The algorithmic crystal: Conceptualizing the self through algorithmic personalization on TikTok. *Proceedings of the ACM on Human-computer Interaction*, *6*(CSCW2), 1-22.

18. Lincoln, Y., & Guba, E. (1985). Naturalistic Inquiry Vol. 75 Sage. *Beverly Hills, CA*.

19. Meng, J. (2021). Discursive contestations of algorithms: A case study of recommendation platforms in China. *Chinese Journal of Communication*, *14*(3), 313-328..

20. Miles, M. B., Huberman, A. M., & Saldana, J. (2014). Qualitative data analysis: A methods sourcebook. *(No Title)*.

21. Park, H. W., & Park, S. (2024). The filter bubble generated by artificial intelligence algorithms and the network dynamics of collective polarization on YouTube: the case of South Korea. *Asian Journal of Communication*, *34*(2), 195-212.

22. Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage publications.

23. Salles, J. (2025). Affect and prediction in short-video social media recommendation algorithm: TikTok and the missing half-second. *New Media & Society*, 14614448251385086.

24. Schellewald, A. (2022). Theorizing "stories about algorithms" as a mechanism in the formation and maintenance of algorithmic imaginaries. *Social Media+ Society*, *8*(1), 20563051221077025.

25. Shi, Y. (2025). Machine learning based user profile recognition for popular short videos on social platforms. *International Journal of Computational Systems Engineering*, *9*(1), 1-10.

26. Stake, R. E. (1995). The art of case study research.

27. Tai, Q. (2014). China's media censorship: A dynamic and diversified regime. *Journal of East Asian Studies*, *14*(2), 185-210.

28. Tan, Y., & Yoon, S. (2025). Testing the effects of personalized recommendation service, filter bubble and big data attitude on continued use of TikTok. *Asia Pacific Journal of Marketing and Logistics*, *37*(5), 1280-1301.

29. Ullah, F., & Lee, S. (2016). Social content recommendation based on spatial-temporal aware diffusion modeling in social networks. *Symmetry*, *8*(9), 89.

30. Vombatkere, K., Mousavi, S., Zannettou, S., Roesner, F., & Gummadi, K. P. (2024, May). Tiktok and the art of personalization: investigating exploration and exploitation on social media feeds. In *Proceedings of the ACM Web Conference 2024* (pp. 3789-3797).

31. Wang, J., Qu, J. G., & Leo-Liu, J. (2023). An algorithmically woven community: Disclosing mental illness and connecting with similar others on an algorithm-mediated platform in China. *Social Media+ Society*, *9*(4), 20563051231205596.

32. Wang, M. (2025). Virtual ethnography of "China travel" content: an empirical study across short video platforms. *International Communication of Chinese Culture*, 1-26.

33. Whyke, T. W., Chen, Z. T., & Lopez-Mugica, J. (2022). An analysis of cultural dissemination and national image construction in Chinese influencer Li Ziqi's vlogs and its impact on international viewer perceptions on YouTube. *The Journal of Chinese Sociology*, *9*(1), 14.

34. Yang, Y. (2025). Short video content and recommendation algorithm based on deep learning. *Journal of Computational Methods in Sciences and Engineering*, 14727978251337878.

35. Yin, R. K. (2018). *Case study research and applications* (Vol. 6). Thousand Oaks, CA: Sage.

36. Zhang, C., & Liu, L. (2025). A Comment Study of Li Ziqi's Cultural Short Videos in Light of Attitude System. *Journal of Theory and Practice in Humanities and Social Sciences*, *2*(3), 1-12.

37. Zhang, H., & Wei, Y. (2024). Visual frames in promotional video: a semiotic analysis of What is Peppa?. *Semiotica*, *2024*(257), 177-201.

38. Zhang, M., & Liu, Y. (2021). A commentary of TikTok recommendation algorithms in MIT Technology Review 2021. *Fundamental Research*, *1*(6), 846-847.

39. Zhang, Y. S. D., & Noels, K. A. (2024). Cultural empathy in intercultural interactions: the development and validation of the intercultural empathy index. *Journal of Multilingual and Multicultural Development*, *45*(10), 4572-4590.

40. Zhang, Z., & Zhang, L. (2025). Most Significant Impact on Consumer Engagement: An Analytical Framework for the Multimodal Content of Short Video Advertisements. *Journal of Theoretical and Applied Electronic Commerce Research*, *20*(2), 54.

41. Zhao, H.（2022）Research on short videos to enhance the influence of international communication of traditional Chinese culture. Int. Commun. Chin. Cult 9, 45–56. https://doi.org/10.1007/s40636-022-00244-6.

42. Zhao, J., & Zhang, D. (2024). Visual propaganda in chinese central and local news agencies: a douyin case study. *Humanities and Social Sciences Communications*, *11*(1), 1-14.

43. Zhu, D. (2025). Optimizing the user personalized recommendation system of new media short videos by using machine learning. *Journal of Computational Methods in Sciences and Engineering*, 14727978251341490.

44. Selbst, A., & Powles, J. (2018, January). "Meaningful information" and the right to explanation. In *conference on fairness, accountability and transparency* (pp. 48-48). PMLR.

45. Canepa, A., Mattassoglio, F., & Ferretti, F. (2025). *EU Digital Markets Law*. Kluwer Law International BV.

46. Bradshaw, S., Elswah, M., & Perini, A. (2024). Look who's watching: Platform labels and user engagement on state-backed media outlets. *American Behavioral Scientist*, *68*(10), 1325-1344.

47. Amara, A., Hadj Taieb, M. A., & Ben Aouicha, M. (2023). Cross-social networks analysis: building me-edge centered BUNet dataset based on implicit bridge users. *Online Information Review*, *47*(1), 81-103.

48. Xiao, Q., Huang, W., Qu, L., & Li, X. (2025). The impact of multimodal information features of short sales videos on consumer engagement behavior: A multi-method approach. *Journal of Retailing and Consumer Services*, *82*, 104136.