



RESEARCH ARTICLE

The Impact of Sports and E-Sports Live Streaming on China's Post-Pandemic Recovery: A Comparative Case Study of Douyin and Huya

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The COVID-19 pandemic significantly disrupted global economies and social structures, accelerating digital transformation across industries, particularly in China's live-streaming sector. Platforms like Douyin and Huya emerged as critical players in forming community engagement and inclusivity while driving economic innovation. This study examines their adaptation to pandemic challenges, focusing on revenue model adjustments and their impacts on China's digital media and sports broadcasting industries. Using a mixed-methods approach, including secondary data analysis and semi-structured interviews, the research highlights Douyin's integration of sports content and community-building features and Huya's emphasis on e-sports professionalisation. Findings reveal how these platforms have contributed to economic recovery by creating revenue streams, generating employment opportunities, and supporting adjacent industries like e-commerce and telecommunications. Simultaneously, they have promoted inclusivity and social cohesion through diverse content and interactive features, addressing urban-rural digital disparities. However, challenges such as ethical content moderation and mental health risks remain, necessitating adaptive social policies. Recommendations include expanding digital infrastructure, promoting public service content, and enhancing digital literacy programs. By balancing economic growth with ethical considerations, Douyin and Huya showcase the transformative potential of live streaming in establishing socio-economic resilience and innovation during crises.

1. INTRODUCTION

The COVID-19 pandemic has profoundly impacted global economies and social structures, with China, as the initial epicentre, experiencing significant disruptions. The economic downturn triggered by the pandemic led to contractions in several sectors; however, it also accelerated a digital transformation across the country (Lee et al., 2021). This change, especially in the media sector, saw live-streaming services like Douyin and Huya shoot up. Their traditional entertainment and sports were rationed due to social distance; thus, a larger fraction of people resorted to watching and seeking information digitally, which triggered much expansion in the live-streaming sector (Qiu et al., 2021). Douyin, popularly known as TikTok internationally, significantly expanded its customer base by offering a comprehensive spread of content, such as homemade videos and live exercises (Kaye et al., 2021). Again, Huya is primarily known for the broadcasting of e-sports through its platform. With enhanced interest in gaming, amid lockdowns, the platform organised major e-sport events which could not be held in physical locations (Huya, 2018). Entertainment was offered by these services; at the same time, they started to become an important socialising hub for people fraught with isolation.

The objectives of the study are to analyse the adaptation of Douyin and Huya's revenue models to the challenges brought forth by the pandemic and, in turn, assess the consequences of these changes on

China's digital media and sports broadcasting industries. This research aims to explore users' perceptions of the effectiveness of these platforms in promoting community engagement and inclusivity during the recovery phase after the pandemic. Given the massive role these platforms play in the current digital landscape, understanding their contribution to economic recovery and social cohesion is crucial. This comparative study on Douyin and Huya is relevant because it gives insight into the resilience and adaptability of digital platforms in times of crisis. It also goes further to talk about the impacts of digital media's evolutionary changes on industries and in society at large, drawing valuable lessons to policymakers, industrial stakeholders, and the scholarly community on utilising digital tools for the economic and social recovery processes.

Research questions

1. How have Douyin and Huya changed their revenue models following the COVID-19 situation, and what are the implications for China's digital media and sports broadcasting sectors?
2. How well are Douyin and Huya in supporting users' engagement and inclusion at community levels during post-pandemic recovery?

2. LITERATURE REVIEW

Digital transformation in the media industry

The media industry has undergone tremendous transformation in the last decade from digital technologies, which were highly influenced by the COVID-19 pandemic. Digital technologies have changed the pattern of content creation, distribution, and consumption in the media industry in the global market. It has helped media companies reach a wider audience, reduced operational costs, and invented new content delivery formats (Stocker et al., 2017). Live streaming sites have been the most prominent because they facilitate immediate communication between content creators and their audiences. Fast-inducted AI and cloud computing are some of the technologies adopted in the media sector, which improve user engagement and personalised content (Rane et al., 2024). This has made traditional media companies think over strategies to adapt to a more interactive and data-driven environment. Moreover, the shift towards mobile-first content delivery has seen the consumption behaviour of media shift dramatically with users preferring short, engaging content accessible on the go. Another major implication of the rise of digital transformation in the media sector has been democratisation in terms of content creation. With new technological breakthroughs, individuals and smaller entities have started creating and distributing content to an extent once exclusive to large media houses. Examples include Douyin and Huya, where individuals can now reach audiences globally with a minimal investment beforehand (Shen et al., 2023). The rise has been powered by integrated tools such as video editing software, AI-driven content recommendations, and monetisation options that help to sustain a career. In the same vein, however, this democratisation comes with its set of problems, including increased competition and the proliferation of low-quality or misleading content (Qiu et al., 2017). As these technologies continue to grow, they are constructing public discourses and forming cultural attitudes in manners that require responsible innovation and governance to balance accessibility with quality and integrity in a digital landscape.

Economic impacts of live streaming

Economically, live streaming has generated enormous revenue streams through different channels and fundamentally changed the business models within the media industry and beyond. Diversifying their monetisation strategy through advertisements, subscription models, pay-per-view models, and virtual gifting has helped platforms produce more significant financial growth (Chalaby, 2023). It provides stability in revenue along with helping platforms to react to shifting consumer preferences as well as economic conditions. With a multitude of monetisation options, live-streaming services are well-equipped to endure sustainable growth while creating user engagement on a more intimate level with customisable and adaptable payment terms. Furthermore, such services have created multiple jobs at different levels, such as content developers, technical support personnel, digital marketing specialists, and analytics professionals, indicating a trend toward digitalised jobs in the economy (Chukwu, 2023). Live streaming also catalyses growth in other industries. For example, the telecommunication and technology sectors have gained more demand because of high-speed internet and the latest streaming technologies. On the other hand, retail and fashion industries have made the most of live streaming by partnering with influencers and real-time selling, a method that has

transformed conventional e-commerce by allowing immediate interaction with the viewer and purchasing options (McCormick et al., 2014). So live stream has transformed the world of media, and entertainment as much as it has inspired critical economic innovation and cross-sectoral growth in reshaping industries in its expansive digital wake.

Social impacts of live streaming

On the social front, live streaming has redefined user engagement and community formation. It provides a platform for real-time interaction and shared experiences that sets up a sense of community between users from different backgrounds. Platforms for live streaming have also proved to be very useful in bridging geographic and social divides, allowing different parts of the world to connect over different activities and interests (Zhu et al., 2024). Even though this has brought immense benefits to many, its impacts are not only positive. It provides social support and the feeling of belonging, yet, it is linked to negative implications such as social isolation, cyberbullying, and internet addiction (Xu, 2023). Such duality justifies a balanced strategy toward digital engagement that should emphasise maximum benefit with reduced detrimental effects arising from higher interactions online. This can further blur the lines between public and private spaces, leading to more complex issues about personal privacy and ethical dilemmas regarding content boundaries and moderation (Gorwa et al., 2020). Live streaming has also been critical in democratising content creation. With minimal technical expertise or capital, an individual can now broadcast to a global audience, challenging the traditional gatekeepers in the media industry (Siciliano, 2022). It increases the diversity of content but brings up the issues of quality control and the spread of false information.

Research gap

The existing literature on digital transformation, especially in live streaming, is not very comprehensive in terms of long-term socioeconomic impacts post-pandemic and is more qualitative within developed markets. There is a significant lack of longitudinal, cross-platform studies that provide a holistic comparison between different live-streaming services. Moreover, the impact of live streaming on different demographic segments, especially in less developed regions, is not well explored. It attempts to fill these gaps by doing a comparative analysis of Douyin and Huya, examining the roles played by these companies in the post-pandemic recovery through a mixed-method approach that combines quantitative data with qualitative user interviews. Such an approach would help enhance understanding of live streaming influence across diverse social and geographic contexts, leading to more inclusive digital policy frameworks.

3. METHODOLOGY

This study uses a mixed-methods approach to combine the analysis of secondary data with a semi-structured interview to examine the economic and social impacts of Douyin and Huya in China's post-pandemic recovery. This study's quantitative foundation comes through secondary data analysis by making use of existing datasets coming from industry reports, financial statements, and other research study reports to examine revenue models, user growth, and market trends. The descriptive statistics will be used to deliver a very clear overview of the economic footprint of the two platforms, including comparisons in terms of revenue streams and engagement metrics. This shall, for the first time, give a macro-view level about the roles of these platforms in the digital economy. Simultaneously, with this, semi-structured interviews with users of Douyin and Huya shall also inject qualitative depth into these findings. Personal insights are thereby introduced based on how such influences community engagement and inclusiveness. Each interview will consist of a standard set of questions so that there is a standard response while providing extra questions where participants can explain experiences and perceptions. This will give insight into how users subtly interact with such sites and perceive their impacts on social connectivity and cultural inclusivity. The methodology uses robust secondary data combined with detailed testimonies from users, providing a full analysis of shifting dynamics in the post-COVID-19 China media landscape, pointing out digital transformations in live streaming and integration into everyday life and changes in broader socio-economic development. It integrates diversified sources of data that balance statistical trends and human experience and becomes more vital in the development of understanding the complex interplay of economic strategies and social outcomes in digital media platforms.

4. ECONOMIC IMPACT ANALYSIS

The COVID-19 pandemic has significantly impacted Douyin and Huya's economies, especially since they adapted their revenue models to the new paradigm. Douyin leveraged the shift to digital consumption by adding more sports content, using its massive user base to introduce targeted advertising, new partnership models, and interactive ads optimised for mobile viewing (Ocean Engine, 2024). This strategic adaptation would enable Douyin to sustain user engagement during the period of restricted physical activities and, simultaneously, to establish itself as a versatile platform meeting evolving consumer demands in the digital age. In this respect, Douyin included strategies such as collaborating with sports and fitness influencers to produce exclusive, subscription-based content that substantially diversified Douyin's revenue streams and brought in fresh marketing opportunities for brands in sports that are now struggling to engage physically during lockdowns (Su et al., 2020). This strategy tackled immediate needs from the consumer side while at the same time putting Douyin as a crucial element in the digitalisation of sports marketing, a channel to partnerships and revenues for the post-pandemic era. Douyin grew extremely fast; users reached more than 600 million in daily engagement in September 2020 while on lockdowns, engaging people on social media platforms (Dao Insights, 2021). This surge was fuelled by the platform's ability to cater to evolving consumer needs, including fitness and educational content. By December, the platform averaged over 400 million video searches per day, solidifying its role as a key player in China's digital ecosystem (Dao Insights, 2021). It enabled Douyin to remain competitive in a difficult time for the digital media industry, as their strategies kept abreast of shifting consumer tastes. Similarly, Huya reinforced its hold on the e-sports market which experienced explosive growth when live sports were cancelled. During the third quarter of 2020, Huya indicated that its paying users increased by 13.2% year-over-year and it had 6.0 million premium subscribers. This compares to 5.3 million users in the same period in 2019 (Huya, 2020). This was attributed to overall user growth as well as content, product, and service enhancement, which positively influenced the engagement and monetisation capabilities. As a consequence, Huya was able to penetrate the growing demand for Internet-based entertainment during the COVID era. Huya organised numerous other e-sports online tournament programs with international gaming companies, which increased its sponsorship and advert income generation (Business Insider, 2023). Thus, all these strategic actions boosted the financial base of Huya as well as dramatically facilitated the professionalisation and growth of China's e-sports industry, along with its necessary infrastructural support, for pre-, during, and after the pandemic. Huya has indicated the possibility of digitisation, sustaining economic growth within emerging sectors even in the most daunting of times.

The COVID-19 pandemic has accelerated the digital transformation of several industries, and live-streaming platforms such as Douyin and Huya have emerged as crucial players in reshaping economic and consumer dynamics. In terms of sports content innovation, Douyin transformed how sports brands interact with their consumers, shifting from more traditional advertising to more engaging and direct marketing strategies by taking advantage of the platform's broad reach and high user engagement rates (Lee et al., 2024). This change has helped brands adapt to the economic crisis triggered by the pandemic as well as establish new standards for digital sports marketing. Likewise, Huya's efforts in e-sports have fostered significant industry expansion from content production to organising e-sports events, providing technical services, and performing digital marketing (Liu, 2022). All these have led to a great number of job openings and stimulated other industries such as digital infrastructure, gaming technology, and telecommunications. With the growth of production as well as consumption of sports and e-sports content, demand for corresponding goods and services increased (Liu et al., 2024). For example, sportswear and sports gear have recorded higher sales through the online channel as a direct outcome of promotions on Douyin. In addition, e-sport tourism, both in virtual and real life, has improved with cities hosting virtual competitions recording more attention and subsequent visitation interest through Huya's coverage and promotion of these competitions (Sun, 2022). These economic ripple effects illustrate the influence of digital platforms on their core industries and also the wider ecosystem they operate. Strategically, the adaptations of Douyin and Huya in the pandemic have ensured financial growth for the two companies and also had a significant role in the development of the broader economic environment of digital media and sports broadcasting in China. Their ability to pivot and innovate under pressure has given significant insights into the resilience of digital platforms and their ability to drive industry-wide

transformation, which may be sustained toward more integrated, digitally driven economic models in the post-pandemic era.

5. SOCIAL IMPACT ANALYSIS

The table below represents a thematic analysis based on the semi-structured interview (Refer to Appendix). These themes are for understanding how users perceive the effectiveness of Douyin and Huya in promoting community engagement and inclusivity during post-pandemic recovery.

Keywords	Sub-Themes	Themes
Comments, likes, shares, challenges	User engagement strategies	Facilitating active community engagement
"Feeling connected," "part of a group," "interactions"	Building social connections	Forming a sense of belonging and social cohesion
Diverse content, inclusive creators, "different backgrounds"	Representation and accessibility	Promoting inclusivity through diverse content and features
Fitness videos, sports participation, e-sports tournaments	Encouraging healthy lifestyles	Driving health awareness and participation through live content

Analysis of themes

Theme #1: Facilitating active community engagement

Users find that Douyin and Huya are very effective in encouraging active community engagement as interacting features are there. Douyin users often said they were connecting through commenting, sharing, and participating in challenges, one saying, "I actively engage by commenting and sharing videos that resonate with me." Similarly, Huya users pointed out that they connect through live streams by participating in live chats and virtual gifting. For example, one noted, "I participate in live chats and follow my favourite streamers." This sense of involvement instead of mere consumption has proven very valuable during pandemic-induced isolation. Douyin's trending challenges and collaborative content form shared experiences and dynamic discussions, while Huya's polls, group streams, and tournaments strengthen the bond among gamers. Both these platforms are digital hubs in which users are shaping the narrative of the community actively.

Theme #2: Establishing a sense of belonging and social cohesion

Belonging and social connections came through as benefits of the pandemic for users of Douyin as challenges and interactions with people assuaged loneliness. "It was a window to the world when physical interactions were limited," said one respondent. The gamer-friendly nature of the Huya interface made it warm and welcoming toward users. "It kept connected with my gaming mates as well as maintained a sense of normalcy," said another user. It shows just how this platform acts as a digital community around shared interests to find help in trying times. Douyin users stated that challenges on the application encouraged creativity, allowing for skills to be showcased and recognition from a wider audience, thereby boosting confidence and societal bonds. Huya players mentioned that regular live streams and tournaments provided comfort and stability during chaotic times. It enabled real-time interaction with streamers and viewers, bridging virtual and real-world social interactions. Huya became a social outlet for forming meaningful connections among people with shared interests. Both became crucial platforms for healthy emotional and social functioning in the context of limited physical interaction.

Theme #3: Promoting inclusivity through diverse content and features

It also suggests that Douyin has been promoting inclusiveness well, considering the perceived variety in content and representation on this platform by users. On Douyin, respondents appreciated how the algorithm "introduced me to other creators, so many creators from diverse communities" who "help broaden my perspectives." Users of Huya also highlighted the move towards inclusiveness by appreciating how it brought about spotlights for niche communities within gaming, as well as female

gamers. A participant commented: "They have smaller communities, which makes the platform feel welcoming to everyone." This means both platforms have managed to build environments where a wide range of users feel represented and included. According to the users, Douyin also showcases underrepresented voices in trending features, which are actively featured, making smaller creators reach a wider audience. This has been particularly successful in promoting cultural exchange because users are consuming content from different regions and ethnic groups in China and elsewhere. Another reason users commended Huya is for its presentation of niche gaming communities, and it also hosts events and streams that promote diversity, such as female gamer tournaments and international gaming teams. These efforts were appreciated as they broke stereotypes in the gaming world and gave the audience a sense of equality and inclusiveness. It also appreciated the accessibility feature for both platforms, including multiple languages and user-friendly interfaces that make them welcoming to all kinds of audiences. These kinds of efforts reflect an obligation to inclusivity and reach beyond content, making room for acceptance and representation.

Theme #4: Driving health awareness and participation through live content

Users of Douyin argue that the website promotes healthy lifestyles through their fitness videos and sports challenges. "I learned yoga on Douyin, and now it's in my life," one user said. This is how the website promotes healthy lifestyles. Even though Huya is not a fitness website per se, it gives mental fitness by providing gamers with a controlled and entertaining environment. A user mentioned, "Streaming games gave me a sense of purpose and kept me mentally active during lockdowns." These findings highlight the role of the platforms in promoting both physical and mental health while addressing user needs holistically during the pandemic. Douyin users also highlighted how accessible and diverse fitness content on the platform made it easier to find workouts suited to their individual needs, ranging from beginner-level routines to advanced challenges. Many of the participants agreed that this kind of community that came from the challenges through viewing other's progress and sharing one's own motivates the environment. Integration of live fitness sessions was another important aspect because this provided a feature for user interaction with the instructors, thereby building a sense of accountability and engagement. For Huya, this e-sports trend had proven to be very relieving for its users to vent out stress as well as socialise especially when most of them were required to be isolated. Some stated that competing in tournaments or streaming their favourite streamers has helped exercise their problem-solving and team-playing abilities, which strengthened them mentally during such harsh moments.

6. ROLE OF COMPETITIVE LIVE STREAMING IN YOUTH ENGAGEMENT

Competitive live streaming has been the most important tool to attract youths, and Huya and Douyin play complementary yet distinctive roles. Huya is known to have been a leading platform for e-sports that brings youths an immersive experience focused on competitive gaming. It allows users to view tournaments in real-time and share community experiences through interactive features like real-time chat and virtual gifting (Tian et al., 2024). These factors make Huya very appealing to youths, who not only regard the service as a form of entertainment but also a social medium. Douyin, on the other hand, caters for the more diverse interest of youths with different content from dance and music to sports and education. This flexibility allows Douyin to reach a larger population of youth, engaging them with interactive challenges and creative content formats that are designed to encourage participation and self-expression (Hu, 2024). The two address different dimensions of youth engagement: Huya is competitive collaboration in gaming, while Douyin encourages creativity and cultural exploration. Moreover, the two platforms have greatly generated career opportunities for youths in professional gaming and content creation. Huya has contributed significantly to the professionalisation of gaming, being an all-in-one hub for e-sports and enabling youngsters to become streamers, coaches, or even team managers roles that were not so defined before or undervalued (Ye, 2019). A wide number of users mentioned Huya as a platform where young gamblers can build up an audience, secure sponsorships and transition into careers in competitive gaming. Douyin has, therefore, given young content creators entrepreneurial opportunities through monetisation tools and brand partnerships. The algorithm on the platform also ensures that creators get to see more visibility, building their followers and making money from advertising and collaborations (Huang & Ye, 2023). Moreover, both applications have been instrumental in contributing to social issues such as youth unemployment and digital illiteracy. By endowing young users with competencies in digital content production, communication, and marketing, they have

empowered youths to adjust to the new demands of a digital-first economy, thus reducing unemployment and increasing technological literacy levels (Huang & Ye, 2023). It showcases the real potential of the live streaming platforms in developing the new generation and resilience in the economy and society.

Aside from creating work opportunities, the two- Huya and Douyin have addressed various social issues plaguing youngsters, such as unemployment in youth and ignorance of cyber skills, becoming one of those tools that have the hope of transforming them amid post-pandemic times. However, Huya has found its niche mainly in designing a career way for gamers, which exposes them to strategic thinking and teamwork. For instance, young people hosting competitions or streaming games on the Douyin platform are not only technically skilled but entrepreneurial at the same time, just as the labour market begins to value (Jing, 2020). Content creation on Douyin has democratised opportunities as it allows youth to raise income from creative activities despite varying socio-economic backgrounds. Douyin has empowered youth to participate in the gig economy and build sustainable online businesses by offering tutorials on content production, editing tools, and marketing strategies (Liu & Wang, 2022). Both services have added to the betterment of digital literacy, a key competency in the new technological age. Douyin users learn to work within algorithms, know how to read audience analytics and participate in digital marketing activities that help them become more competitive in the job market. Huya users gain hands-on experience with live-streaming technologies and communication tools. In this way, they achieve a multi-layered understanding of digital ecosystems (Jing, 2020). These innovations have bridged social differences because they have given tools and platforms for different groups to express their talents and involve them in the digital economy. Douyin and Huya have ensured the achievement of youth engagement, and the same has also been a stimulus for socio-economic development by facilitating the skills and chances for the world to develop young people.

7. POLICY IMPLICATIONS

Douyin and Huya emphasised the necessity of creating more comprehensive policy frameworks that cover regulation, as well as ensuring a fair competitive level for the existing and emerging platforms. All these need to be approached in regulatory measures regarding the issues of content moderation, intellectual property rights, and data privacy, which are vital for the protection of users. For example, uniform content policies could prevent the spread of harmful misinformation but would at the same time give several representations in various channels (Saurwein & Spencer-Smith, 2020). Furthermore, laws on fair competition such as monopoly regulation are a must for dominant players to be halted from preventing innovations and instead creating soundness of the market forces in live streaming. The government must also focus on user safety through data protection policies that would ensure transparent data usage policies and encryption standards (Atadoga et al., 2024). Such frameworks may boost user trust and ensure the sustainability of ecosystems. The infrastructure requirements are a crucial aspect of policy-making in live streaming. This would depend on the kind of live-streaming service involved. Douyin is calling for the scalability of the infrastructure to hold voluminous uploads of short video lengths with features of enormous user interaction. Huya on the other hand seeks its stronghold through minimum latency streaming along with high-definition videos aimed toward the competitive gaming fraternity (Wang et al., 2022). Policymakers need to give incentives for investments in 5G and cloud computing technologies so that these specific needs can be addressed on platforms. The next-generation network technologies could be further utilised to open live streaming to less connected areas to bridge the gap of the urban-rural divide in the digital arena. Policymakers could also consider how the Douyin and Huya insights may be used in the provision of public service delivery and education programs. For instance, Douyin may be used to facilitate the running of microlearning programs. The interactive nature of Huya may be useful for a collaborative educational setting. These approaches point out the fact that live-streaming sites can be entertainment services and also social development instruments.

In addition to managing the content and infrastructure of such live-streaming platforms, policy frameworks should also take into consideration the potential for providing public services and educational initiatives. Douyin, with its broad user base and wide outreach, can play a critical role in spreading public health-related information, cultural education, and vocational training through various entertaining and accessible content formats. For instance, Wu & Yang (2024) indicate that the government can engage Douyin in disseminating information about mental health or digital

literacy, among youth and in rural regions. Similarly, Huya features such as interactivity and community could be a venue for shared learning: virtual classrooms or skill acquisition sessions. Policies that motivate the inclusion of public service content on platforms through incentives such as subsidies, tax breaks, or recognition programs will push such platforms to realign their business models in tandem with societal benefits. This way, live streaming would serve as an entertainment and national development tool, thus bridging educational and service delivery gaps in underserved communities (Wang et al., 2023). Policymakers face ethical challenges in the field, like digital addiction, cyberbullying, and unequal digital tool access. Platforms such as Douyin and Huya offer engagement and inclusivity but also risks to vulnerable user groups, such as younger crowds who are exposed to excessive time on screens or could be susceptible to negative online relations. These risks could be mitigated if such policies that would necessitate features for the protection of the users were developed. For example, features that can facilitate time management, mental health, and strict moderation of the content would be useful (Nahmias & Perel, 2020). This will further enable persons with disabilities and from marginalised regions to access these services. The positive social impact of live streaming can further be improved through government-led initiatives to increase digital literacy and responsible online behaviour in collaboration with the platforms (Sharma et al., 2023). Growth will thus be balanced with ethical responsibility, and the contributions of the platforms to social and economic development will be sustainable.

8. CHALLENGES AND ETHICAL CONSIDERATIONS

One of the key issues of live streaming platforms such as Douyin and Huya is that they face the urban-rural divide in China. The urban groups enjoy high-speed internet services and the general availability of digital devices, whereas, in rural locations, connectivity is scarce or lacking and also lacks the technological infrastructure to gain access to the new digital economy (Tiwasing et al., 2022). This gap further exacerbates the socio-economic disparities in the rural users and access to the platforms of Douyin and Huya. The expansion of digital infrastructure through the increased installation of 5G networks and affordable internet services can be some of the primary ways of bridging the gap. Other areas include content provision that caters to a more rural audience: educating people and offering localised content within regional languages to heighten digital literacy and participation among the more vulnerable users of the platforms (Smith et al., 2022). This can also bridge those gaps, ensure equality, and open participation of an even larger pool of the digital population. Another major issue - building responsible practices, as well as developing efficient content moderation practices for live streaming services. Douyin and Huya have both the challenging tasks of finding a balance between user-generated content freedom and the prohibition of harmful or inappropriate material. Failure to regulate content will create problems such as cyberbullying, spreading misinformation, and exploiting vulnerable groups, undermining the credibility and social influence of these platforms (Schoenebeck & Blackwell, 2021). Policies requiring the implementation of advanced moderation technologies, such as AI-driven content filtering and real-time monitoring, are important in mitigating these risks. Hiring diverse moderation teams who can identify and address cultural sensitivities and nuances is also important for maintaining ethical standards (Moon & Christensen, 2021). Transparent content guidelines coupled with accessible reporting mechanisms for users can further enhance safety and accountability. Therefore, by stressing good practices, Douyin and Huya can develop a safer and more expansive digital space that serves the expectations of users and society.

The other significant challenge that live streaming sites such as Douyin and Huya face is balancing the economic benefits of their operations with the possible negative mental health impacts on the users. The more entertaining features that the sites create and implement, the more users may overuse the service, especially younger users who are more susceptible to digital addiction. Other associated effects of excessive screen exposure with endless live streaming include social avoidance and sleep disruption, stress levels, and anxiety George et al., 2023. Competition and desire for performance, especially live streams on platforms like Huya, are also other conditions linked with stress and burnout associated with content creators who make considerable efforts to maintain these highly engaged audiences and subsequent earnings. For instance, the pressure to maintain a high-quality and consistent stream may cause unhealthy work habits and mental strain among streamers (Peng et al., 2024). To this end, features that encourage balanced usage and support mental well-being must be incorporated by the platforms. For instance, Douyin can improve its current time

management features, like reminding users to take a break after a long period of activity. Huya can do the same but in a mechanism tailored for streaming, providing resources for a work-life balance and access to mental health support. Besides this, both companies can team up with mental health agencies to launch campaigns that sensitise users to the dangers of overexposure and healthy digital living. Also, live streaming can promote wellness content, like mindfulness sessions or fitness challenges. Douyin may extend its healthy-living content and fitness videos to also include mental wellness. For example, Huya may begin offering guided relaxations during gameplay as part of their packages as it can help reduce the impacts of mental health effects alongside meeting the company's intent for creating a more supportive and inclusive community. Since the companies can actively monitor and address these risks early, Douyin and Huya can maintain and increase their economic growth while providing and caring for the welfare of its users and creators to balance between profitmaking and social responsibility.

9. CONCLUSION AND RECOMMENDATIONS

Compared to Douyin and Huya, their roles play an important part in the recovery process of China post-pandemic but they have utilised it differently. Douyin was able to create creativity, inclusiveness, and health consciousness through its wide range of content, interactive challenges, and algorithm-driven personalisation. Sports content integration along with community-building initiatives rewritten the rules of user interaction in the digital space. Huya has been focusing on professionalising e-sports and creating a structured playing field for competitive games. It includes real-time tournaments. Strategies of this nature have led to the development of devoted communities, as well as economic gains in this fast-growing sector of e-sports. Challenges, however, face both platforms. For instance, the urban-rural digital divide, content moderation on ethical grounds, and maintaining economic growth against the issue of mental health are some of the challenges facing the platforms. Hence, issues call for responsive social policies and comprehensive regulatory systems that maximise the positive social impact of live streaming. In the longer run, governments can build some digital infrastructure, such as making it accessible for the majority of underprivileged groups to have access to 5G networks. Douyin and Huya can collaborate with policymakers in localising content and engaging in digital literacy programs tailor-fit to certain rural groups. Such steps would enable urban and rural users to enjoy equal benefits from digital opportunities, thus bringing greater participation into broader society. The second step is that the platforms must strengthen ethical practices and content moderation on their networks. AI-driven moderation tools, along with diverse human moderation teams, will ensure effective oversight while considering cultural sensitivities. Transparent content guidelines, accountability measures, and user-friendly reporting systems will help build user trust and maintain ethical standards.

Adaptive social policies, as the nature of new media evolves, should be designed by policymakers to ensure fair competition, data protection, and inclusivity. Incentives may be put in place to encourage public service content like educational resources and mental health campaigns to integrate on platforms, their objectives aligned with societal benefits. Live streaming platforms also have a potential role to play in socio-economic development. Douyin can stretch its model to microlearning programs, vocational training, and cultural exchange activities for education and skills. Then, Huya will avail itself of the community functions it has in creating common projects such as virtual hackathons or innovation labs for entrepreneurship and innovation, among others. Importantly, these two need to expand the efforts for employability and digital literacy towards the youth. Huya could also partner with schools to launch e-sport management programs, and Douyin would be able to give aspiring content creators mentoring as well as tutorials, that can equip the youth appropriately in the capability to join the digital-first economy addressing the unemployment and the skills gap appropriately. Douyin and Huya can remain long-term drivers of innovation and socio-economic development by addressing the critical challenges that currently exist. Policymakers and the relevant stakeholders need to come together and work towards a sustainable digital ecosystem with inclusive growth and ethical responsibility in terms of balancing economic growth and making sure live streaming remains a powerful force in the digital era.

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APPENDIX

Interview transcript

Douyin users

Participant 1:

Q1: How often have you used Douyin? **A1:** I have been on Douyin almost every day. It helps me with my daily, especially to unwind and have time for fun.

Q2: What kind of content do you usually watch? **A2:** I usually watch fitness challenges and travel vlogs. They entertain me but also inspire me to try out some new things.

Q3: How do you interact with other users or content creators? **A3:** I engage actively by commenting, liking, and sometimes sharing videos that interest me. I also follow creators who inspire me or share interesting content.

Q4: Has Douyin helped you feel more connected during the pandemic? **A4:** Yes, it has been essential for maintaining social connections. It's a platform where I can see what others are doing and share my own experiences, which makes me feel part of a larger community.

Q5: Do you feel that Douyin promotes an inclusive environment? Have you noticed any efforts by Douyin to enhance inclusivity? **A5:** Douyin does seem to promote inclusivity by featuring a diverse range of content creators and topics. I've seen creators from various backgrounds, and the algorithm often introduces me to new content, which helps broaden my perspective.

Participant 2:

Q1: How often do you access Douyin? **A1:** Several times a week. It's my go-to for quick entertainment and learning new things, like cooking.

Q2: Which types of videos attract you the most? **A2:** Cooking and baking videos are my favourites because they are easy to follow and very practical.

Q3: How active are you in the Douyin community? **A3:** I mainly like and share videos. I'm a bit shy about commenting but I do engage when I feel strongly about a post.

Q4: How effective do you think Douyin is at establishing community engagement? **A4:** It's quite effective. The platform encourages interaction through features like challenges and live streams where everyone can participate.

Q5: Have you experienced any initiatives by Douyin to support inclusivity or community building during the pandemic? **A5:** Douyin has hosted several themed challenges and live events that aim to keep people motivated and connected. These initiatives were open to everyone and encouraged participation across different user groups, which really helped feel everyone included.

Participant 3

Q1: How frequently do you log into Douyin? **A1:** Multiple times a day—it's my main source of entertainment and interaction with others who have similar interests.

Q2: What's your preferred content on Douyin? **A2:** I enjoy dance and music videos the most because they are vibrant and full of energy.

Q3: How do you participate in the Douyin community? **A3:** I post my own dance videos, which have helped me connect with a community of dancers and music lovers on the platform.

Q4: Has Douyin helped maintain your social interactions during COVID-19? **A4:** Absolutely, it has been a critical tool for staying connected and socially active, despite physical distancing.

Q5: In what ways has Douyin worked to promote inclusivity among its users? **A5:** Douyin has been great at promoting inclusivity by highlighting content from underrepresented groups and providing a platform for diverse voices. This approach has allowed me and many others to feel represented and part of a community.

Huya Users

Participant 4

Q1: How often do you use Huya? **A1:** I log in to Huya nearly every day. It's where I watch all of my favourite e-sports events, and interact with the gaming community.

Q2: What streams do you watch on Huya? **A2:** I mainly tune in to eSports competitions and live gameplay streams, especially for strategy and action games.

Q3: Do you interact with streamers or other viewers? **A3:** Yes. I'm very active in the stream chat. I also follow several streamers and from time to time donate some money for them.

Q4: How effectively do you think Huya does in stimulating engagement within the community, amongst users? **A4:** Very effective. The live interaction between the streamers and viewers can really create a sense of community.

Q5: Is there any effort by Huya to make the app more inclusive and accessible to users of all kinds? **A5:** Huya has been doing its best to increase accessibility. They have been working on more language options, making the user interface friendlier for people with disabilities. They also promote streams from a diverse array of gamers, which makes everyone feel welcome.

Participant 5:

Q1: How often do you log on to Huya? **A1:** I go several times a week; it usually is on weekends as I have more free time then.

Q2: Which streams on Huya would you most like to check out? **A2:** I generally watch MOBA tournament streams, and general multiplayer online battle arena (MOBA) games.

Q3: How involved are you in the Huya community? **A3:** I am active in participating in live chats, supporting the streamers, and participating in other community activities.

Q4: Does Huya help to create a sense of community in its users? **A4:** Yes, the interface strongly encourages user-to-user interaction and reinforces a sense of community.

Q5: In what ways do you feel included or represented on Huya? **A5:** Huya does a great job of including a broad content range that caters to the interests and backgrounds of a wide variety of users. They feature female gamers and small, niche gaming communities, for example, which helps to create a more inclusive environment.

Participant 6

Q1: How often do you go on Huya? **A1:** Daily. That is all my socialising in the evening.

Q2: What are the types of Huya streams that you like best? **A2:** I am most interested in live eSports tournaments and participating in viewer polls and discussions.

Q3: Do you interact with content creators on Huya? **A3:** I frequently communicate with streamers through comments and participate in community games and events.

Q4: How does Huya promote community engagement in your experience? **A4:** Huya does a pretty good job by hosting interactive events and establishing a lively chat environment that makes everyone feel like they are part of the action.

Q5: How inclusive is the platform for new and casual users? **A5:** Huya is generally a very friendly place to newcomers as well as casual players. They provide tutorials as well as streams that allow newcomers to start, giving them the best beginner feel right from the starting stages.