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Yuqian Liu

Baruch College, City University of New York, yuqian.liu@baruch.cuny.edu

Chaoqun Deng

Baruch College, City University of New York (CUNY), chaoqun.deng@baruch.cuny.edu

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The Role of Media Synchronicity Fit and Sense of Community in Live Streaming Platforms

Short Paper

Yuqian Liu

Baruch College, CUNY
New York City, NY, US
Yuqian.Liu@baruch.cuny.edu

Chaoqun Deng

Baruch College, CUNY
New York City, NY, US
Chaoqun.Deng@baruch.cuny.edu

Abstract

To understand viewers' sense of community in the live streaming environment, this research synthesizes media synchronicity theory and sense of community theory to develop a theoretical framework. We aim to examine the antecedents and consequences of the sense of community in live streaming platforms. We expect that viewers' actual communication purpose (e.g., conveyance or convergence) will influence viewers' sense of community in the live streaming context and further impact their activities in traditional third-party online communities. We first use experiments to validate the mechanism in our theoretical model and then collect observational data from Twitch, a popular live streaming platform, to test our hypotheses. Our results will provide theoretical contributions to the live streaming, online community, and communication literature. Our findings will provide practical implications for streamers in the live streaming platform.

Keywords: Sense of Community, Media Synchronicity Fit, Live Streaming, Experiments, Natural Language Processing, Deep Learning

Introduction

As an emerging format of online social media, live streaming allows streamers to live-broadcast to their audience in real-time by sending them various format of contents (Zhao et al., 2022), including audio, visual and text content. The increased of live streaming has attracted research attention to this phenomenon and motivated researchers to explore the mechanisms behind its popularity and success. Live streaming research has focused on the technical perspective of live streams (Pires et al., 2015), viewers' purchase intention (Sun et al., 2019; Park & Lin, 2020; Lu & Chen, 2021), interactions between viewers and streamers (Hamilton et al., 2014; Hu et al., 2017), viewers' motivations (Bründl & Hess, 2016; Gros et al., 2017) and virtual gifting behaviors (Liu et al., 2022; Li & Guo, 2021). Recent research has started to investigate live streaming platforms from the lens of community sense, including investigating the relationship between viewers' sense of community (SOC) and their engagement with live streaming platforms (Chen & Liao, 2022; Hilvert-Bruce et al., 2018; W. Zhang et al., 2022), examining psychological antecedents (Kairam et al., 2022; Sherrick et al., 2023) of SOC in the live streaming environment (Hamilton et al., 2014), and studying the relationship between the SOC and viewers' purchase intention (Y. Zhang et al., 2023). These studies are the first step toward developing a deeper understanding of the SOC in the live streaming context.

Studying SOC in a live streaming environment is essential for viewers, streamers, and the platform. As a feeling that members have of belonging to the group (McMillan and Chavis, 1986), SOC indicates individuals' continuous involvement in the community. Research indicates that viewers' SOC motivates them to engage in live streaming platforms (Chen & Liao, 2022; Hilvert-Bruce et al., 2018; W. Zhang et al.,

2022). The deeper the SOC, the more viewers want to stay on the platform, resulting in an increased ease of use. Similarly, facilitating viewers in growing SOC aid streamers to attract and solidify new followers. Especially in the situation that more streamers treat their live channels seriously to make a living, understanding the mechanism of viewers' SOC helps them to grow their businesses. Lastly, without helping viewers grow SOC towards the platform, the platform's survival will be challenging as it can't attract and retain customers. To understand the mechanism of SOC in the live streaming context, we need to decompose SOC, including its antecedents and consequences.

However, current research does not shed much light on the systematic antecedents and consequences of SOC in the live streaming platforms. Unlike traditional online communities (e.g., TripAdvisor, Twitter, etc.), which rely on asynchronous communication, live streaming platforms mainly support synchronous communication. Typical synchronous communication media like face-to-face communication, and video conferencing are suited for activities that require high social presence and information richness, such as negotiation and decision-making (Rice, 1993). Alternatively, asynchronous communication media such as email and text are appropriate for activities that require low social presence and information richness, including information exchanging and staying in touch (Rice, 1993). Asynchronous communication is supported through a built-in community feature and/or third-party communities. The way viewers and streamers communicate on live streaming channels impacts their behaviors. For example, information overload issues might occur while the audience size becomes too big in a channel (Hamilton et al., 2014). While viewers follow channels, they felt that synchronous communication during live sessions impedes their continuous communication desires. The importance of communication drives us to study antecedents of viewers' SOC in live streaming platforms from the communication perspective.

In addition, the way to connect streamers and viewers while they are offline varies across platforms. Douyu.com creates a built-in community called "Yuba" to support asynchronous communication for streamers and viewers. Facebook Live and TikTok Live did the same using corresponding social media features. However, platforms like Twitch, Amazon Live, and Huya.com do not include this built-in community feature. Instead, Twitch and Amazon Live allow streamers to add external links to third-party communities such as Twitter, Facebook, Telegram, TikTok, Instagram, and Discord. Interestingly, viewers view differently regarding whether live streaming platforms should adopt third-party communities to facilitate asynchronous communication. Some Twitch viewers prefer using third-party communities as a supplement feature. Many streamers agree with this idea because they think that Twitch lacks a built-in community feature for promoting themselves (TopDasherTimmy, 2021). Also, streamers complained about the current hard-to-use notification feature, which prevents viewers from getting timely notifications for upcoming schedules and changes (TrunsMcflun, 2022). However, some viewers are satisfied with current Twitch features. They felt that they had already talked enough with the streamer synchronously during live sessions (TrunsMcflun, 2022). Those contradictory opinions indicate that viewers are willing to keep active even when streamers are offline. Therefore, viewers' activities in third-party communities can serve as a potential consequence of SOC.

In this paper, we try to develop a theoretically anchored framework to examine the impact of viewers' actual communication purposes on their SOC in the live streaming context and their direct and indirect effect on viewers' activities in third-party online communities. We expect that different communication purposes might trigger different levels of SOC for a live streaming platform, and further influence viewers' activities in third-party communities. To examine our research questions, we synthesize the media synchronicity theory and SOC theory to establish our theoretical framework.

Theory Background

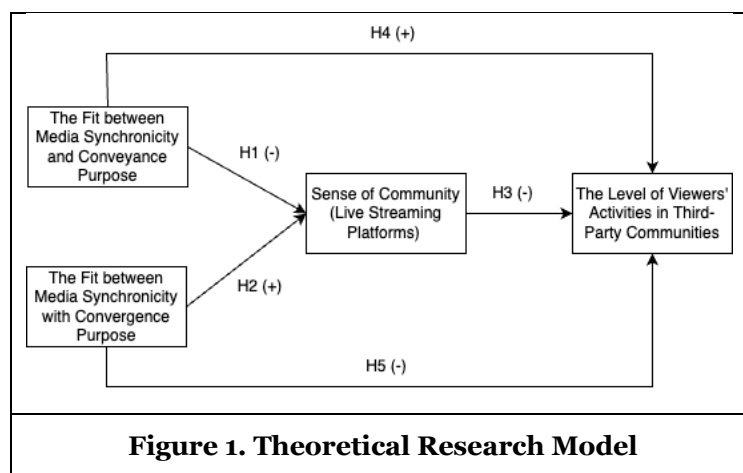
Media synchronicity theory (MST) addresses that the fit among media synchronicity, viewers' communication purposes, and other personal appropriation factors imply better communication results (Dennis et al., 2008). To address the essential role of synchronous communication in the live streaming context, we adopted MST in this study. Synchronicity describes a status where individuals act or coordinate synchronously with a shared focus (Dennis et al., 2008). It can be challenging to achieve synchronicity because individuals may process information differently with distinct communication purposes or use inappropriate communication media. Sometimes even individuals move exactly together, they may not achieve synchronicity (Dennis et al., 2008). Media synchronicity is defined as "the extent to which the capabilities of a communication medium enable individuals to achieve synchronicity" (Dennis et al., 2008,

Page 581). MST argues that when there is a fit between the information processing needs of the communication purposes and media synchronicity, better communication performance will be achieved (Dennis et al., 2008). Communication performance between streamers and viewers is significantly affected by the fit between their communication purposes and live streaming channels. Therefore, MST provides a strong theoretical foundation for answering our research questions. Communication purposes in MST are classified into two groups: conveyance and convergence communication purposes. For the conveyance purpose, raw information transmission and retrospective analysis are the focus. Individuals are less interested in processing and negotiating the information in this process (Dennis et al., 2008). Alternatively, for the convergence purpose, individuals focus on discussing and negotiating preprocessed information from their mental model and developing a shared understanding (Dennis et al., 2008). According to MST, for the convergence communication purpose, higher media synchronicity leads to better communication performance (Dennis et al., 2008). Alternatively, for the conveyance communication purpose, lower media synchronicity leads to better communication performance (Dennis et al., 2008). Matched with characteristics of synchronous and asynchronous communication, asynchronous communication is suited for conveyance purposes and synchronous communication is ideal for convergence purpose. The concept of MST will bring a new perspective and help to decompose communication in detail.

The concept of SOC was first developed by McMillan and Chavis (1986). They defined the SOC as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan and Chavis, 1986, Page 9). They also identified four dimensions of SOC: membership, influence, shared emotional connection and fulfilment of needs (McMillan and Chavis, 1986). As an extension to online communities, past research has examined dimensions of SOC from different perspectives, including viewers’ immersion to online communities (Koh & Kim, 2003), members’ trust to online communities (Tsai et al., 2011), and human experience of a virtual community feeling (Tonteri et al., 2011). In most current research about SOC, constructs such as sense of place, social interaction (Mamonov et al., 2016), psychological ownership (W. Zhang et al., 2022; Mamonov et al., 2016), parasocial relationships (Sherrick et al., 2023) are used as antecedents of SOC. Considering the consequences of SOC within online communities, researchers explored the relationship between SOC and engagement (Hilvert-Bruce et al., 2018), community participation (Wang et al., 2012), information sharing (Blight et al., 2017) and other communal benefits, such as sociability and success of the community (Hamilton et al., 2014). We integrate SOC and MST to jointly explore the influence of communication purposes as the antecedents of viewers’ SOC in the live streaming context. We also extend our research scope from the current community to third-party communities as the consequence of SOC in the live streaming context.

Hypotheses Development

Based on MST and literature about sense of community, we develop five hypotheses in our theoretical research model. Figure 1 displays the research model and hypotheses.



As previously mentioned, the conveyance purpose is to deliver a substantial amount of unprocessed information that facilitates retrospective analysis (Dennis et al., 2008). This eliminates the need for

frequent simultaneous transmission and processing of information by individuals. Alternatively, the convergence purpose requires transmitting a high level of abstracted information and negotiations between individuals quickly (Dennis et al., 2008), to arrive at a shared understanding of certain topics. Various formats of information are always available for streamers in live streaming sessions, such as audio and visual contents while viewers only use chats to communicate (Hu et al., 2017). Live sessions with different topics are typically organized in corresponding channels and categories. Streamers' communication purposes may vary during live sessions. For example, streamers in sports/esports event commentary or life-sharing live sessions might involve the conveyance purpose mostly, because streamers in both topics are inclined to transmit either the content of esports competition or share their daily life with viewers. Alternatively, streamers and viewers focus on a shared convergence purpose in chatting live sessions. More negotiations and discussions are needed to ask/answer questions to reach an agreement (Dennis et al., 2008). Gaming live sessions may involve both conveyance and convergence purposes with different focuses (e.g., just playing a video game at all times or explaining and discussing game skills with viewers). In addition, interactions between viewers and streamers play an important role in developing individuals' SOC. Literature indicates that individuals' interactions for generating some common values help to develop their SOC in online communities (W. Zhang et al., 2022).

When streamers and viewers communicate with a shared conveyance purpose, they pay more attention to activities that require low social presence and information richness. Thus, streamers and viewers shift their focus toward processing the transmitted information and reduce their interactions. In this case, live streaming platforms are not appropriate for the conveyance purpose, because the conveyance purpose does not require frequent and fast simultaneous transmission (Dennis et al., 2008). Viewers might not feel that they are engaged with streamers strongly because their attention is on the information they just received. What is more, members' feelings about membership, influence, emotional connection and fulfillment of needs to an online community are important dimensions about members' SOC (McMillan and Chavis, 1986). In this case, viewers cannot communicate effectively with streamers and the communication performance will be decreased. Thus, viewers' feelings of being a member, influence, emotional connection and fulfillment of needs to the live streaming environment will be decreased, as reflected in the decreased SOC for live streaming platforms.

H1: Viewers and streamers' communication with the conveyance purpose in the live streaming context will be negatively related to the level of viewers' sense of community for live streaming platforms.

In contrast, live streaming platforms are appropriate for streamers and viewers who share a same convergence purpose. On one hand, live streaming platforms mainly support synchronous communications. On the other hand, the convergence purpose requires fast synchronous information transmission (Dennis et al., 2008). Streamers and viewers are allowed to transmit a high volume of abstracted information and focus on activities which require frequent and real-time communication. When the fit between media synchronicity with the convergency purpose is achieved, streamers and viewers shift their focus toward activities such as discussing topics of mutual interests to both streamers and viewers or reaching an agreement by negotiating. It significantly improves streamers and viewers' interactions such that they will achieve better communication performance. It also makes viewers feel that they are strongly engaged with streamers all the time. If viewers feel that they are more directly engaged with streamers, a stronger SOC will be generated for viewers (Sherrick et al., 2023). During this process, viewers might feel like a part of the live streaming channel, more emotionally connected, satisfy their needs, and more influence to the platform. Those four dimensions of an online community are reflected in the SOC (McMillan and Chavis, 1986). Consequently, viewers' level of SOC for live streaming platforms will be increased. Thus, we propose hypothesis 2 as follows.

H2: Viewers and streamers' communication with the convergence communication purpose will be positively related to the level of viewers' sense of community for live streaming platforms.

Research indicates that generating individuals' SOC will benefits individuals (Klein & Aunno, 1986). Individuals may feel more secure and happy, be more self-identified and self-respected, and feel less stressed with the increased SOC (Klein & Aunno, 1986). Similarly in the live streaming context, a higher level of SOC for live streaming platforms will benefit viewers. Viewers might become more committed to platforms and identify themselves as members of live streaming platforms. In the live streaming context, SOC plays an important role in motivating viewers to engage in live streaming platforms (Chen & Liao, 2022; Hilvert-Bruce et al., 2018; W. Zhang et al., 2022). As viewers' communication needs have been

fulfilled already by using live streaming platforms, there is less need for them to participate in third-party asynchronous communities. As a result, they are more likely to coordinate with others and adhere to activities in live streaming platforms, but not in third-party asynchronous community activities, such as posting, replying, liking, or disliking others' comments. Therefore, the level of viewers' activities in corresponding third-party asynchronous communities will be decreased. Therefore, we propose hypothesis 3 as follows.

H3: Viewers' sense of community for live streaming platforms will be negatively related to the level of viewers' activities in third-party asynchronous communities.

In addition to the indirect effect through SOC, we are also interested in examining the direct effect of different communication purposes on the level of viewers' activities in third-party asynchronous communities. Since low synchronicity is required for the conveyance purpose (Dennis et al., 2008), fewer interactions between streamers and viewers are expected. Meanwhile, conveyance purpose requires individuals take much more time to process and analyze the information (Dennis et al., 2008). The lack of interactions between viewers and streamers increases viewers' need for continual communication. If this communication need cannot be satisfied during the live session, third-party communities serve as ideal places for viewers to fulfill their needs. Streamers commented that Twitch's built-in notification feature is inadequate because their viewers can't receive updated notifications of future schedules and changes (TrunsMcflun, 2022). Some viewers said that they joined streamers' third-party communities because they want to receive updated notifications of streamers' live session schedules, and stay in touch with others (TrunsMcflun, 2022). In addition, streamers try to convert viewers to their third-party communities to keep connected with them (Zillieness, 2023). Those opinions indicate that both viewers and streamers share the same conveyance purpose which requires more asynchronous communication. Third-party communities are ideal for fulfilling those needs. Streamers would like to send extra information which requires viewers' time and effort to process offline. Similarly, viewers are willing to acquire more updated and relevant information from streamers while they are offline. Accordingly, viewers are likely to join and participate in third-party asynchronous communities. Thus, hypothesis 4 is developed as follows.

H4: Viewers and streamers' communication with the conveyance purpose will be positively related to the level of viewers' activities in third-party asynchronous communities.

Similarly, we can expect a higher level of social interactions between viewers and streamers because high synchronicity is required for the convergence purpose (Dennis et al., 2008). This convergence purpose entails less processing time (Dennis et al., 2008) and motivates both streamers and viewers to engage in real-time interactions and discussions. In addition, we found viewers commented on Reddit that they have enough discussions with streamers during streamers' live sessions (TrunsMcflun, 2022). Viewers show little interest in participating in third-party asynchronous communities in this case because viewers' communication needs have been satisfied by live streaming platforms already. Some viewers are willing to communicate with streamers for a shared convergence purpose in a gaming live session, by negotiating with streamers about better game skills and assisting streamers in enhancing the quality of the channel. MST suggests that the match of communication media synchronicity and the communication purpose results in better communication performance (Dennis et al., 2008). To communicate more effectively for the convergence purpose, live streaming platforms would be the best places for streamers and viewers to communicate. Therefore, viewers do not need to participate in additional third-party communities. As a result, we propose hypothesis 5 as follows.

H5: Viewers and streamers' communication the convergence purpose will be negatively related to the level of viewers' activities in third-party asynchronous communities.

Research Methodology

Data and Preliminary Descriptive Statistics

To investigate the theoretical mechanism and our hypotheses, we first conducted a preliminary descriptive statistics about streamers' activity data in one live streaming platform and viewers' social presence in other third-party communities. Twitch, as one of the most popular gaming live streaming platforms, is selected as the research context. We collect secondary data from Twitch and a third-party data collection website (TwitchTracker.com) by web crawling. The data collected includes streamers of various popularity levels

and whether they have a presence in other social media platforms, related to their streaming identity/role. Streamers' data are monitored and updated regularly by the website. We collect basic statistics for 200 streamers, including streamer ID, streamers' rank, number of viewers, time they have streamed, number of peak time viewers, hours watched, followers gained, number of total followers, number of total views and number of external social links they have been utilized. All data are gathered based on a 30-day period and overall rank is calculated based on average concurrent viewers, followers, views, and stream time for the last 30 days. The sample data indicates that the most streamers are socially presented in other third-party asynchronous communities. The top five social media platforms for streamers are YouTube (23%), Twitter (22%), Instagram (20%), Discord (15%), and TikTok (9%) in our sample.

Our descriptive statistics show that about 90% of streamers adopt at least two third-party communities in their live streaming channels. This finding indicates that third-party communities are being actively used by streamers and their viewers on Twitch. To test our theoretical model, we plan to use the following two methods: experiment and observational data analysis. We will first use an experiment to validate the mechanism in our theoretical model. Then we will use observational data to examine the direct effect of communication with conveyance or convergence purpose on the level of viewers' activities in third-party communities.

Study 1: Experiment

Firstly, we will run a randomized experiment with a between-subjects design to test our theoretical mechanism and conduct a mediation analysis. The between-subjects design helps us to minimize participants' possible learning effects during the experiment. To mimic the regular live streaming environment, we will conduct the experiment on Twitch live streaming channels. One of the researchers will conduct two live sessions and manipulate two independent variables separately. In a quick Reddit survey about how much time viewers spend on watching a Twitch channel before following, about 70% of individuals said they would follow a Twitch channel within the first 30 minutes of watching (Danpendr, 2020). This result indicates the importance of the first live session for viewers. The first live session largely impacts viewers' decisions about whether they want to follow and continue watching the channel next time. In our experiments, each live session will be running for about 15-30 minutes to help the majority of viewers decide whether they want to stay on our channel and get a sense of our channel in the live streaming context. A popular video game that is going to be released is selected as the topic in live streams. In the first live session, the researcher will simulate the scenario in which communication mainly conveys the conveyance purpose. By doing so, the researcher will focus on transmitting information about the game, such as newly added game features and fascinating insights from various news resources. In the second live streaming event, the researcher will mimic the scenario that communication mainly conveys the convergence purpose, by asking or answering viewers' questions and discussing game skills with viewers. We will run a pilot study with a few participants and guarantee that topics discussed in two live streams convey correct information about the conveyance/convergence purposes. To minimize the potential bias from participants' familiarity with the live streaming platform and the game, we plan to recruit individuals with no experience using Twitch and new to the game we selected. Participants will be randomly assigned into two groups and participate in two live streaming events separately. During the experiment, participants will be shown instructions first and then watch live streaming sessions. After that, participants will be asked to fill in the same set of post-survey questions such as demographic information, previous game experience, screening questions, and questions about SOC. Detailed survey questions are shown in the appendix.

Study 2: Observational Data Analysis

To provide stronger evidence for our theoretical model, we will use observational data to explore the direct effect of communication with the conveyance/convergence purpose on viewers' activities in third-party asynchronous communities. To measure independent variables, we will dig deep into Twitch chat data in live streaming sessions to see to what extent the communication purpose is conveyance and to what extent the communication purpose is convergence. We can download streamers' all available videos and corresponding chats using a Twitch downloader tool. All videos will be converted to transcripts with timestamps. In the corresponding chats, we will be able to collect viewers' data, including their ID, username, comment, comment time, and more information regarding viewers' accounts. In the next step, we will create our dataset by matching the timestamps of video transcripts and viewers' comments. We will

analyze each sentence in chat data and classify it into the conveyance or convergence purpose. For example, comments such as “Such a great game skill!” and “I never thought to play this game like this.” are typical messages that transmit the conveyance communication purpose. Messages such as “You shouldn’t play the game like this as it may be a bug” will be classified into the category of convergence purpose. Next, we will use Amazon Mechanical Turk to label 5% of sentences as the training dataset and use deep learning and natural language processing methods to classify all the remaining sentences in our sample data. After completing the classification work on the entire live streaming chat data, we will calculate the proportion of communication with the conveyance and convergence purpose. In terms of the popular third-party community, we target asynchronous communication between viewers and streamers on Discord. We will collect the digital trace data from each streamer through a chat exporter tool. We will be able to collect chat history data, including user ID, posting time, and comment content. Other Discord related data will be collected as well, such as the number of followers, the member list, and specific discussion threads with hashtags. The dependent variable “the level of viewers’ activities in third-party asynchronous communities” will be measured by the increased number of viewers’ posts or replies one day after a streamer ends the live streaming session. We will collect other control variables that will influence our dependent variable.

Conclusion and Contributions

In this study, we aim to investigate viewers’ SOC in the live streaming context, its antecedents, and consequences. To address this research question, we develop a theoretical model and hypotheses based on MST and SOC literature. Our future work will use the experiment method and econometrics analysis on observational data to verify our theoretical model and hypotheses. In terms of theoretical contributions, we contribute to live streaming literature, SOC literature, and communication literature by examining the SOC in live streaming platforms. We extend and investigate its antecedents and consequences in the live streaming context as most current research only focuses on live streaming user behaviors, such as viewers’ purchase behavior (Park & Lin, 2020; M. Zhang et al., 2020) and gifting behavior (Liu et al., 2022; Li & Guo, 2021). They did not pay attention to the essential characteristics of live streaming platforms. It also contributes to understanding and solving the potential dilemmas between different communication purposes in the live streaming context. As for practical implications, our research results might help streamers to form a personalized revenue chain. They can decide to either offer live content with convergence purpose, conveyance purpose or both, such that making money from multiple resources. Our results may help them decide where and how to increase their visibility and viewers’ engagement level.

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Appendix

Screening question

1. Would you be interested in watching live streams related to "the name of the selected video game"? (a) Yes, (b) No
2. Have you watched Twitch live session before? (a) Yes, (b) No

Demographics questions (Kairam et al., 2022; Y. Zhang et al., 2023)

2. What is your current age? (a) Under 18, (b) 19-29, (c) 30-39, (d) 40-49, (e) 50-59, (f) Above 60
3. Please indicate your gender (a) Female, (b) Male, (c) Non-binary/Third gender, (d) Prefer to self-describe, (e) Prefer not to answer
4. Which of the following best describes you? (a) Non-gamer, (b) Casual-gamer, (c) Midcore-gamer, (d) Hardcore-gamer
5. What is your current annual income? (a) Less than \$20,000, (b) \$20,000 to \$34,999, (c) \$35,000 to \$49,999, (d) \$50,000 to \$74,999, (e) \$75,000 to \$99,999, (f) Over \$100,000
6. What is your current employment status? (a) Employed, (b) Student, (c) Homemaker, (d) Self-employed, (e) Unemployed
7. What is the highest degree or level of school you have completed? (a) Less than high school, (b) High school, (c) College, (d) Graduate school

Game experience questions (Y. Zhang et al., 2023)

8. Which genres of games do you like? (You can select multiple options)? (a) Action, (b) Strategy, (c) RPG (Role-Playing Game), (d) Indie, (e) Adventures, (f) Sports, (g) Simulation, (h) MOBA (Multiplayer Online Battle Arena), (i) Others
9. On average, how much time do you spend in playing video games per day? (a) I don't play video games, (b) 1–30 min, (c) 31–60 min, (d) 61–90 min, (e) 91–120 min, (f) More than 121 min

Sense of virtual community in live streaming platforms (Blanchard, 2007) in 7- Likert Scale

1. I think Twitch is a good place for me to be a member.
2. Other members and I want the same thing from Twitch.
3. I can recognize the names most members in this Twitch.
4. I feel at home in Twitch.
5. I care about what other Twitch members think of my actions.
6. If there is a problem in Twitch, there are members here who can solve it.
7. It is very important to me to be a member of Twitch.
8. I expect to stay in Twitch for a long time.
9. I anticipate how some members will react to certain questions or issues in Twitch.
10. I get a lot out of being in Twitch.
11. I've had questions that have been answered by Twitch streamers and other viewers.
12. I've gotten support from Twitch streamers and other viewers.
13. Some Twitch viewers and streamers have friendships with each other.
14. I have friends in Twitch channels.
15. Some Twitch streamers and viewers can be counted on to help others.
16. I feel obligated to help others in Twitch channels.
17. I really like Twitch.
18. Twitch means a lot to me.

Viewers' intention to join in third-party asynchronous communities.

1. After watching this live stream, are you willing to join in corresponding third-party asynchronous communities, such as TikTok, Twitter and Discord? (a) Yes, (b) No