

Watching TikTok Live Streaming: A Data Collection for Public Life Study in Hutong

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ABSTRACT

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The block policy caused by COVID-19 has made public life researchers cannot conduct their studies. However, in recent years, fewer public life studies have proposed new tools to reduce human job involved in data collection process. Hence, this article has proposed a new way to collect public life studies data: watching TikTok live streaming. This research aims to test the reliability of this new data collection method by comparing the contents of Hutong residents' public lives from field research and TikTok live streaming. The researcher conducted an ethnographic investigation in Hutong. In the field research process, the researcher used observation to collect data and recorded it by taking photos and taking notes. While watching TikTok, the researcher selected four anchors who often conduct live streaming in Hutongs to watch and recorded the data by taking screenshots. Data from two different collection methods was analyzed by thematic analysis separately. Results show that the data obtained by watching TikTok live streaming is more comprehensive than that obtained by field research; besides, using TikTok to collect data can sufficiently reduce the input of human jobs. The researcher thought the social function of TikTok may provide more help for data collection. Hence this study advised future research to test the reliability of conducting interviews using TikTok.

1. INTRODUCTION

Since the COVID-19 outbreak in 2019, the lockdown policies for preventing the spread of the disease have made it difficult to travel between cities. Especially for the researchers living in remote areas, if their study areas are far from their hometowns, they will not be able to conduct field research. Under this situation, watching live streaming has become a new way to know about other cities. Following TikTok live streaming, audiences can feel "almost being there" to experience different lifestyles [1]. Hence, the researcher anticipated that watching live streaming might be a data collection way for public life studies.

TikTok is one of the most popular social platforms in China. Many people conduct live streams on TikTok for money [2]. As a traditional Chinese residential area, Hutong is a popular place for TikTok anchors. The content of live streaming in Hutong shows that TikTok might be a helpful instrument for investigating Hutong residents' public lives. At the same time, there are not any empirical studies to show whether TikTok can be used in Hutong public life studies or not. Hence, this research aims to test the reliability of this new data collection method. The researcher conducted an ethnography survey in the Nanluogu Xiang areas. In the first stage, the researchers used the observation method to collect Hutong residents' public lives and recorded them by taking photos and notes. In the second stage, the researchers watched four Hutong anchors' live streaming for almost 60 hours, and screenshots recorded the Hutong residents' public lives. Data from two different collection methods was analyzed by thematic

analysis separately. This study anticipated that using TikTok to collect data can sufficiently reduce the input of human jobs, and watching TikTok can get the same data as fieldwork.

2. LITERATURE REVIEW

2.1 Data collection methods of public life study

Public life studies investigate the relationship between people's behaviors and their surrounding environment. According to Gehl and Svarre's [3] theory, data collection methods of public life study are counting, mapping, tracing, tracking, looking for traces, photographing, keeping a diary, and test walks. These methods were developed in the period without any digital devices. Researchers can only use pens, notebooks, counters, and cameras to collect data about the frequency of people's behaviors visiting the research areas, the length that people stay in the research areas, and the characteristics of the built environment where public space users prefer to gather. However, these methods with the backward tools are still widely used today.

Table 1 shows the recent decade's qualitative data collection method of public life studies. Based on the methodology theory proposed by Lune and Berg [4], Sharlene and Leavy [5], and Creswell and Creswell [6], the methods shown in Table 1 were categorized into observations, interviews, documents, and audiovisual digital materials. If studies only use the traditional instrument to collect data, such as conducting interviews by face-to-face chatting or staying in one place for

a long time to observe, Table 1 will consider these studies as not using unusual tools. The standard data collection instruments, such as telephones, cameras, and computers, proved that researchers have already tried to reduce the physical human jobs in their data collection process. For example, interviews could jump out of the face-to-face format, and researchers were able to communicate with participants by phone and e-mail [7, 8]. Automatic cameras allowed observation methods no longer belonged to field research. Using intelligent cameras for observation makes it possible to collect image data without any observer [9]. Professional computer software and databases enable researchers to complete their investigations without conducting field research. Hooper et al. [10] investigated the relationship between urban planning policies and livable communities using Geographic Information Systems (GIS) in the Perth metropolitan region of Australia. Australian National Livability Study provided their data. Colom et al. [11] examined public open spaces' properties attracting participants visiting the Balearic Islands of Spain using the official measurement data. Wang [12] analyzed the land use of Nanluogu Xiang, a traditional residential area in Beijing, through GIS. His data was obtained from Baidu Map, like Google Maps, freely providing Chinese spatial information to the public.

There are also two researchers, Williams et al. [13] and Hoffmann et al. [14] get breaks in the methodology of public life studies. Williams et al. [13] embedded sensors inside a bench and a sandwich board to measure people's interaction with stationary and pedestrians in public spaces. In order to test whether their sensor-embedded furniture is practical or not, they compared the data collected by devices with those collected by the workforce. Results show that it is possible to use sensors to automate the measurement of public life. Hoffmann et al. [14] designed a smartphone application to evaluate public space quality. Compared with the paper version of the public space evaluation tool, their application was more feasible and straightforward. Using their application researchers no longer have to go to the research site to find respondents. Previous public life studies showed a trend that public life researchers are trying to develop easier ways to get

data. With advanced equipment, they successfully reduced the human job involved, showing that it is possible to use digital technology instead of physical surveys.

2.2 Previous study about the public life of Hutong residents

The corners and the junctions of Hutongs are popular places for residents to gather [15-17]. The junction is a node for Hutong residents to stop and greet each other [18, 19]. The interconnected nature of Hutong provides good accessibility, which makes Hutong residents easier to meet each other [20]. Hutong's corners are the social interaction and entertainment places for Hutong residents. The residents of Hutong are used to placing their furniture at the corner of the Hutong to chat, play cards, play Chinese chess, and drink tea [17, 21, 22]. It is a lifestyle for Hutong residents to arrange public spaces according to their needs and they only occupy the corners of Hutong, because Hutong residents do not want to disturb others when they are sitting outside [23].

Although there are many interesting activities in Hutong, the limited research on the classification of residents' public lives in Hutong shows that there is a no comprehensive framework about the public lives of Hutong residents. Only three researchers recently proposed categories for Hutong residents' public lives. Wang [12] conducted his observation work on Nanluogu Xiang using the public life theory of Gehl and Svarre [3] directly. He classified Hutong residents' public life into the behavior of sitting, standing, and walking. As mentioned above, Gehl and Svarre's [3] theory is widely used by public life researchers worldwide. However, some unique activities of Hutong residents are easily ignored by using this general theory. For example, some bird keepers in Hutong would like to walk with their pets or hang their bird cages outside [23, 24]. These people walking with their birds aim to find a place to enjoy their birds' singing and dancing. Besides, birds are also a medium for social interaction, because bird keepers in the same community would like to gather in the same place nearby. It can be found that walking with birds contains serious actions of sitting, standing, and walking, so it is not easy to categorize it into the independent classification of Gehl and Svarre's [3] theory.

Table 1. The recent decade's qualitative data collection method of public life studies

Author (Year)	Qualitative data collection	Unusual tool	Instrument used
Aulia and Napitupulu [25]	Documentations; observations; interviews	No	
Aliyas and Jafari [26]	Observations	No	
Manta et al. [8]	Interviews	No	Telephone
Zapata and Honey-Rosés [27]	Observations	No	
Honey-Rosés [28]	Observations	No	
Mattsson [29]	Documentations; observations; audiovisual and digital materials	No	
Williams et al. [13]	Audiovisual and digital materials	Yes	Bench; sandwich board
Shen and Liu [9]	Observations; audiovisual and digital materials	No	Drone photography
Hoffmann et al. [14]	Interviews; Audiovisual and digital materials	No	Smartphone application
Antonio [30]	Interviews	No	
Hooper et al. [10]	Document; audiovisual and digital materials	No	GIS software
Hipp et al. [7]	Documentations, interviews	No	Telephone, E-mail
Van Hecke et al. [31]	Interviews	No	
Akers [24]	Interviews; observation; case study	No	
Wang [12]	Documents; interviews; observations, audiovisual and digital materials	No	GIS software
Li et al. [32]	Observations; interviews; audiovisual and digital materials	No	DEPTHMAP software
Mateo-babiano [33]	Observations	No	
Akira et al. [34]	Observations	No	
Moreno [35]	Audiovisual and digital materials	No	AJAX software
Simões Aelbrecht [36]	Observations	No	

Zhang and Lu [37] have proposed a classification of the public life of Hutong residents as a part of the result for evaluating Hutong residential satisfaction. They classified residents' daily life into overall outdoor activity, physical exercise, social gathering and entertainment, and shopping. Recent studies have shown that Zhang and Lu's [37] classification is no longer accurate. In detail, they thought washing clothes, washing vegetables, and playing with children all belonged to the overall outdoor activity category. However, after the government upgraded the infrastructure of Hutong, few residents washed their clothes and vegetables outside their houses. Besides, fewer children are playing in the public space of Hutong now. Most of them prefer to play in the park or squares outside Hutong. Playing in Hutong seems to be a compromise to their parents to keep them safe [38].

The last category of public life for Hutong residents was proposed by Zhang [39], aiming to investigate the residential satisfaction of a unique form of apartment in Hutong. She classified the public life of Hutong residents into social interaction and cultural activity. In her research area, this classification is suitable because the architectural form of the apartments has limited public space, and the main content of residents' public lives there is socializing [24, 40, 41]. It is also necessary to classify cultural activities separately because it is hard to classify some Hutong residents' behaviors according to western theory. For example, at night of the Mid-Autumn Festival, Chinese people would like to enjoy the moonlight with their families [39], and the way of enjoying it is diverse. Some residents of Hutong might stroll outside, others prefer to stay on the bar's terrace, and someone might enjoy the moonlight on their balconies. Categorizing these behaviors as cultural activities would make it easier to describe the public life of Hutong residents. Because of the diversity of activities in the public space of Hutong, Zhang's [39] classification is not sufficient when the scope of the study becomes larger. Zhang and Lu [37] found that some residents like to stroll for exercise in Hutong. However, this behavior is neither social interaction nor cultural activity. As a result, it is hard to determine a suitable category for the public life of Hutong residents. Hence, the researcher planned to test the reliability of watching the TikTok live streaming by comparing the data from TikTok and those from the field research. Previous studies on Hutong public life were served as the basis for thematic analysis.

2.3 Police about Hutong conservation

Study about the public life of Hutong residents is a meaningful topic for Chinese scholars. As a kind of architectural heritage, Beijing Hutong has experienced 700 years of history from the Yuan Dynasty to the present [15, 42, 43]. Since the founding of the People's Republic of China, Hutongs have undergone demolition, expansion, renovation, conservation, and restoration. From 1949 to the 1990s, Hutongs have long been considered an obstacle to urban modernization. During this period, many Hutongs were destroyed. At the same time, the architectural forms of the Siheyuans in the surviving Hutongs were greatly altered by the population explosion in Beijing's inner city [12, 42, 44]. In 1999, the Beijing government began to recognize the historical value of Hutongs, and the Beijing government has planned 25 historical and cultural protection blocks. In the historical and cultural preservation area, the Beijing government has sought to restore the architectural form of Hutongs according to the

Hutong presence in Qing Dynasty. There are 43 historical and cultural protection blocks in the inner city of Beijing, proving the Beijing government has been paying attention to protecting Hutongs.

As a kind of residential area, although the Beijing government has held different attitudes towards Hutong protection in different periods, it has never ignored the quality of life of Hutong residents. In the early days of the PRC administration, the Beijing government has been encouraging residents of Hutong to build more houses in their Siheyuan to solve their housing problem. Especially during the 1976 Tangshan earthquake, many houses were built in Hutongs to accommodate refugees [24, 45, 46]. In 1978, the Beijing government conducted a project to renovate the dilapidated houses in Hutong. This activity aimed to build a new type of Siheyuan, which could give Hutong residents more living space and better infrastructure without affecting their living habits. However, the project was halted in 1993 after some residents refused to live in this new type of Siheyuan [39, 47, 48].

Since 2007, more attention has been paid to the residents of Hutongs. In 2007, the Beijing government began to improve Hutongs' infrastructure, such as sewers, electricity, and heating [49]. This action made Hutong have their toilets, kitchens, and bathrooms. In 2011, Protection Planning of Beijing's Historical and Cultural Cities during the 12th Five-Year Plan Period [50] decided to repair the public facilities of Hutong, aiming to sustain an ideal public space for Hutong residents. Since the 1990s, Hutong has gradually become a popular tourist site, making Hutong a kind of Beijing symbol [45, 51-54]. However, the development of tourism brings many troubles to hutong residents. Hence, In the latest policy, Design Guidelines for the Preservation and Renewal of Historical and Cultural Blocks in Beijing [55], the Beijing government has decided to reduce tourism's impact on Hutong's living function.

The policy on Hutong conservation indicates that the Beijing government has been working to improve the living standards of Hutong residents while protecting the architectural form of Hutong. However, section 2.2 showed no complete result about Hutong residents' lifestyles that can reflect the relationship between residents' behaviors and attributes of Hutong. Hence, it is necessary to investigate the content of Hutong residents' public lives as fundamental for Hutong conservation studies.

3. RESEARCH METHOD

3.1 Introduction of TikTok

TikTok is a social media platform that originated from a smartphone application with the function of a short video released by a Chinese company called ByteDance in 2016 [56]. In 2017, TikTok added a new function, live streaming. Making anchors for live streaming has become a new job in recent years. Anchors performed live streaming platforms and interacted with fans in real time. Fans support the anchors through rewards and payments [2]. Live streaming channel types on TikTok are currently dominated by live shopping, live show, and live game. The form of live shopping is diverse. Some anchors would like to sell their products like an online sales clerk. Some anchors prefer to show their talent to increase the number of people watching their live stream

online, and the products they sell relate to their showing talent. In order to give audiences a more profound experience of products, some anchors will try their products by themselves, especially those who are selling discounts on restaurants, bars, or hotels. Following these anchors, the audience can experience the local life of their place. It could also be a new way to replace field research for data collection.



Figure 1. The interface of TikTok live stream

Figure 1 shows the interfaces of the TikTok live streaming. From left to right, the number one picture is the original interface of TikTok showing short videos. The magnifying glass label illustrated by the red box is the button for researching. The interface would jump to picture two if users touched the research button. In picture two, the red box illustrates the research bar where users can input keywords for their interests. People can type any words they want to jump to the interface of picture three. Picture three shows users' research results showing diverse categories, including short videos, users' IDs, products, live streaming, music, location, and related topics. The red areas of picture three are the live streaming image relating to keywords typed in the research bar. Users can choose any channel through the sliding screen and enter the channels by typing the screen twice. The last picture is the live streaming interface. To give an excellent experience to audiences, anchors selling discounts on restaurants, bars, or hotels would keep their cameras' direction similar to their eyes, giving audiences the sense of being there. Audiences can interact with anchors through the dialog box illustrated by the red box. In order to keep the live streaming room active and attract more people-watching, anchors will be happy to interact with the audiences. Besides, anchors are used to following the same routes every day, and their range of action is predictable because they are only active around the restaurants, bars, or hotels they serve.

Based on TikTok's live streaming function, it can be found that conducting observation for data collection through watching TikTok live streaming is feasible. Researchers can choose the live streaming rooms whose anchors' active areas are similar to their research areas. During watching live streaming, researchers can ask anchors to show the live streaming views to the research. Most anchors are very familiar with their active areas, so researchers can conduct a brief interview with anchors to make the data from live streaming easier to understand. Watching TikTok can only replace the way of a participant as the observer, meaning anchors act the role of the special observers in the data collection process. In addition, it is unsuitable to use TikTok live streaming for the observation work that requires staying in one place for a long time because most outdoor anchors of TikTok are used to keeping moving while conducting live

streaming.

3.2 Research procedure

Figure 2 is the flow chart of this research. Similar to Williams et al. [13] method to investigate the reliability of the new data collection method. This research compared the results from TikTok live streaming with those from the field research to investigate whether watching TikTok live streaming is reliable. In 2021, the researcher conducted an ethnographic survey in the Nanluogu Xiang areas. Researchers investigated the public life of Hutong residents by strolling along the Hutong. The field research was conducted in four phases sequentially. The first phase was from 13rd to 17th in January; the second was from 12nd to 16th in March; the third was from 4th to 8th in May; and the fourth was from 15th to 19th in July. In the process of field research. To ensure that the people observed were Hutong residents, the researcher paid particular attention to the people gathered at corners or junctions of Hutongs. The researcher also tracked the people who gathered there to investigate the moving behaviors of the Hutong residents.

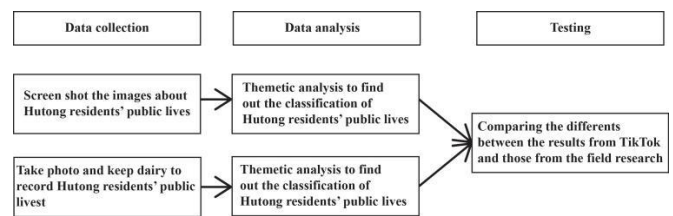


Figure 2. Image of methodology flow chart

From March 7th to April 3rd, 2022, the researcher observed Hutong residents' public life by watching TikTok live to stream. The researcher recorded the activities of residents in Hutong public space by screenshots of live streaming images. At the same time, the researcher has interacted with the anchor in order to better describe the rules contained in the screenshots. Finally, the activities of residents in Hutong public space from TikTok and field research were analyzed based on Hutong residents' public life classifications from previous studies using NVivo. The researcher has compared the results obtained by watching TikTok live streaming with those from previous studies and the author's field research. If the results from TikTok live streaming are similar to those from field research, it proves that watching TikTok live streaming is helpful for public life studies in Hutong. Four anchors' channels were chosen for watching. The first anchor's (called G) live time is daily from 9 am to 12 pm. He has been a tour guide working in Beijing for 20 years. The second anchor's (called Y) live time is daily from 12 pm to 2 pm and 6 pm to 8 pm. anchor Y is a native of Beijing with 30 years of living experience in Hutong. The third anchor (called A) often conducts live steaming every evening from 6 pm to 8 pm. She has lived in Hutong for ten years. The last anchor's (called Z) living time is 10 am to 1 pm. He is a native of Beijing and has worked as a tour guide for 10 years. Unlike other anchors, anchor Z does not conduct live streaming every day.

The researcher found these four anchors used TikTok's search function. First, the researcher typed Beijing Hutongs into the search box of TikTok. Then, TikTok pushed the all the live streaming rooms related to Beijing Hutongs to researchers. After watching all the live streaming rooms, the researchers finally decided on the four anchors mentioned above. The

contents of these anchors' living streaming are strolling around the Hutong community and introducing the stories, histories, or exciting things about Hutong. When they are living, the directions of the live shots are in the same direction as they are looking. In other words, the audience watching their live streaming can feel like strolling in the Hutong. The primary purpose of their live streaming is to get more fans for their accounts to make it easier to sell products. Besides, they never stop during the live streaming to specifically introduce what they sell. In addition, after watching their live streaming, the researchers thought these four anchors were very familiar with the lifestyle of Hutong residents and the history of Hutong. The researcher can ask the anchors when watching live streaming, making data analysis more accurate. The ultimate purpose of the research on Hutong residents' public life is to find ways to improve the quality of Hutong public space. Therefore, whether the data are collected by watching TikTok or field research, this research only focuses on the activities that can interact with the public space in Hutong.

4. RESULT AND DISCUSSION

4.1 Public life of Hutong residents from field research

The observation of field research has got 148 photos of Hutong residents' activities in the public space of Hutong. The researchers described the behavior of the Hutong residents in each photo and conducted a thematic analysis of the descriptions. The results showed that the public life of Hutong residents is individual, cultural, and group entertainment. Individual activity means public life conducted by one person; Group entertainment is the gathering activities giving people feel of funny; Cultural activity is the activities related to art, culture, and traditional Chinese festivals [39]. This classification modifies the results of previous studies.

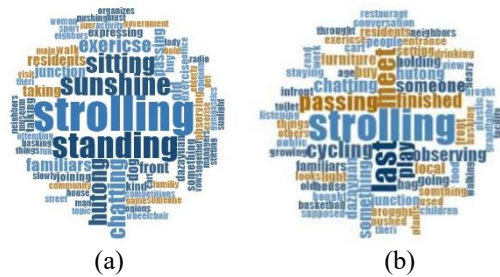


Figure 3. (a) The word cloud about public lives of Hutong residents from field research (b) The word cloud about public lives of Hutong residents from TikTok

As mentioned in section 2.2, categories of public lives of Hutong residents from previous studies are individual outdoor activity, social gathering and entertainment, cultural activity, physical exercise, and shopping. While after field research, the researcher found that some behaviors can classify into more than one category simultaneously. For example, some elderlies prefer to stroll for exercise and always stroll alone [12, 19, 24, 57]. This behavior can both be classified into physical exercise and individual outdoor activity. Besides, residents with long experience in Hutong are used to sitting outside and enjoying the sunlight. They might get some exciting communication from their familiars passing by. Hence, some residents thought basking was a way of entertainment, making this behavior hard to be categorized. As a result, it is more suitable to

simplify the public lives of Hutong residents into individual activity, group entertainment, and cultural activity. Figure 4 shows detail of Hutong residents' public lives. The individual activities include standing for basking, sitting for leisure or basking, taking a dog for a walk, and strolling for exercise; the cultural activities are fun games, meeting with managers, and popularizing scientific knowledge; and the group entertainment is only chatting. Figure 3(a) shows that strolling for exercise is the most frequent public life for Hutong residents, then, in turn, standing for basking, sitting for leisure, or basking and chatting.

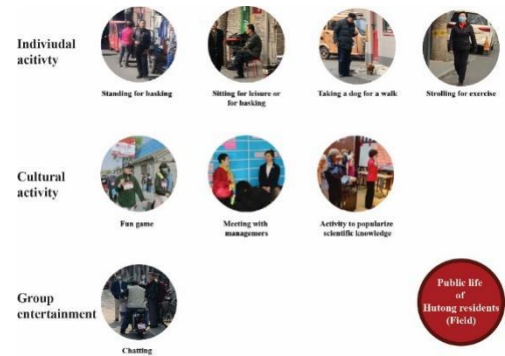


Figure 4. The contents of Hutong residents' public lives from field research

4.2 The public life of Hutong residents from TikTok

There are 510 screenshots of TikTok live streaming Hutong residents' activities in the public space of Hutong. The researchers described the behavior of the Hutong residents in each screenshot and conducted a thematic analysis of the descriptions. Figure 5 shows that the activities observed by TikTok live streaming were summarized into the categories obtained from the field research. However, the researcher found no cultural activities watching TikTok live streaming. Cultural activities in Hutong are organized by the community in a particular room of Hutong [46]. The schedule of each activity would be announced on the Hutong community's social media, but most people are unaware of these cultural activities. Hence, even though anchor Y and anchor A are Hutong residents with long living experiences, it is hard for them to show the data about these cultural activities. The absence of cultural activities cannot prove that field research is irreplaceable. The researcher has found the social media of Nanluogu Xiang, which is a platform to inform the situation of the cultural activities. Anyone can read the information on this platform, including non-Hutong residents. In other words, researchers who watch TikTok live streaming for data collection can make up for data deficiencies through documentation.

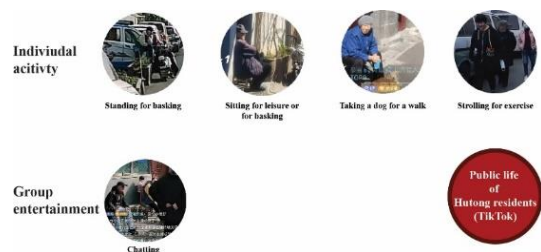


Figure 5. The contents of Hutong residents' public lives from TikTok

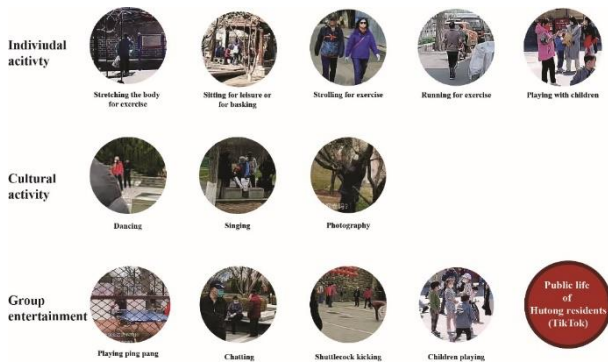


Figure 6. The contents of Hutong residents' public lives happened outside Hutong from TikTok

By comparing Figure 3(a) and Figure 3(b), The more keywords in Figure 3(b) show that TikTok live streaming can reveal more content than field research. Watching TikTok live to collect data is more accessible than fieldwork. The researcher needs to watch their phones and take screenshots of important moments. The time to collect the data equals the time to watch the live streaming that the researcher does not need to waste part of their time running around like fieldwork. Solving the conflicts arising from previous studies and field research has further demonstrated the advantages of watching TikTok live stream.

The research found it hard to see residents gathering in Hutong. There are two anticipants about this phenomenon initially. First, most of the buildings in Hutong are used for tourism development like bars, hotels, or restaurants meaning there are fewer residents living in Hutong practically [15, 18, 52]. Second, most Hutong residents prefer to leisure outside Hutong because of convenient public transportation and the surrounding environment for Hutong communities [34]. Residents of Hutong said both public space of Hutong and parks or squares nearby are all their leisure places, but they did not give the reason for this. Besides, they also did not express which places could make them feel better. Because of limited information from the interview, it is difficult to prove which anticipants are correct.

TikTok live streaming has shown abundant evidence about this helping to solve the problem. Figure 6 shows that the Hutong residents' activities outside Hutong are diverse. There are spontaneous cultural activities here, dancing, singing, and photography; Group activities are no longer limited to chatting. Residents of Hutong can play ping pong or shuttlecock together; More equipment and larger space allowed Hutong residents to have more options for exercise, such as running or stretching. Besides, the author found fewer children seen in Hutong. Previous studies showed that most children prefer to play outside Hutong [38]. While the elderly Hutong residents said fewer children are playing because they are busy with their studies. Data from TikTok live streaming showed that parents would like to take their children to parks or squares for playing. Due to the limited energy of researchers, they can only collect data at the research sites within the target leading the uncomprehensive results. However, it can be sure that watching TikTok can get more comprehensive data than field research. The four anchors chosen by the researcher often strolled to the park or square near the Hutong while conducting a live stream. Hence, the researcher can observe more public life of Hutong residents. In addition, many people are in the public space outside Hutong, including non-Hutong residents. It is difficult for fieldworkers to determine whether the

activities they observe were conducted Hutong residents. While for TikTok live streaming, when the researcher is unsure whether the observed behavior is a habit of Hutong residents, they can ask the anchor. Since anchors are familiar with the way of life of Hutong residents, their answers are available for reference.

5. CONCLUSION

TikTok live streaming is an effective method to measure people's responses in studies on people-place relationships. It can provide sufficient data on what is going on in the research area. Watching TikTok live streaming can collect data can, effectively reduce human job investment, and can obtain more data than field research at the same time. However, watching TikTok live streaming for data collection is not perfect, and some hard-to-find data needs to be made up in other ways. Watching TikTok is beneficial under the block policy caused by COVID-19 so that researchers can get comprehensive data under quarantine. Therefore, TikTok live streaming is reliable for eliciting empirical evidence from public life studies. Besides, TikTok also has a function for social interaction. Every anchor has fan groups that will inform their fans when they will open their live streaming. In order to watch live streaming in time, the researcher joined the groups of anchor Y and anchored G. Communication in the group was active, and all the group members were interested in the Hutong lifestyle. Hence, the researcher thought that if researchers could interview their research topic in TikTok's chatting group, TikTok would be a more effective data collection instrument. Future research can use the interview data from field research to compare the data obtained from the social function of TikTok to test the reliability of TikTok for interviews. If using TikTok for interviews is reliable, field research may be replaced entirely by TikTok data collection someday.

REFERENCE

- [1] Mueser, D., Vlachos, P. (2018). Almost like being there? A conceptualisation of live-streaming theatre. *International Journal of Event and Festival Management*, 9(2): 183-203. <https://doi.org/10.1108/IJEFM-05-2018-0030>
- [2] Hu, Y. (2020). Research on the commercial value of Tiktok in China. *Academic Journal of Business & Management*, 2(7): 57-64. <https://doi.org/10.25236/AJBM.2020.020706>
- [3] Gehl, J., Svarre, B. (2013). How to Study Public Life. <https://doi.org/10.5822/978-1-61091-525-0>
- [4] Lune, H., Berg, B.L. (2017). *Qualitative Research Methods for the Social Sciences*. Pearson.
- [5] Sharlene, N.H.B., Leavy, P. (2017). *Research Design* (S. N. Hesse-Biber & P. Leavy (eds.); Patricia L). Guilford Press.
- [6] Creswell, W.J., Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Sage publications Thousand Oaks, CA.
- [7] Hipp, J.A., Bird, A., van Bakergem, M., Yarnall, E. (2017). Moving targets: Promoting physical activity in public spaces via open streets in the US. *Preventive Medicine*, 103: S15-S20. <https://doi.org/10.1016/j.ypmed.2016.10.014>
- [8] Manta, S.W., Del Duca, G.F., da Silva, K.S., Rech, C.R.,

- da Silva Gomes, R., Maximiano, G.P., Malta, D.C. (2020). Is the availability of open public spaces associated with leisure-time physical activity in Brazilian adults? *Health Promotion International*, 35(1): E51-E58. <https://doi.org/10.1093/heapro/day120>
- [9] Shen, Q., Liu, Y. (2018). Exploring association between morphology of tree planting and user activities in urban public space; an opportunity of urban public space revitalisation. *IOP Conference Series: Earth and Environmental Science*, 128(1). <https://doi.org/10.1088/1755-1315/128/1/012054>
- [10] Hooper, P., Boruff, B., Beesley, B., Badland, H., Giles-Corti, B. (2018). Testing spatial measures of public open space planning standards with walking and physical activity health outcomes: Findings from the Australian national liveability study. *Landscape and Urban Planning*, 171: 57-67. <https://doi.org/10.1016/j.landurbplan.2017.12.001>
- [11] Colom, A., Fiol, M., Ruiz, M., Compa, M., Morey, M., Moñino, M., Romaguera, D. (2018). Association between access to public open spaces and physical activity in a mediterranean population at high cardiovascular risk. *International Journal of Environmental Research and Public Health*, 15(6): 1285. <https://doi.org/10.3390/ijerph15061285>
- [12] Wang, X.H. (2015). Achieve a balance between publicness and commercialisation-Space for public street life in South Luogu Lane Block, Beijing, China. *Royal Institute of Technology*. <https://www.diva-portal.org/smash/record.jsf?dswid=-2750&pid=diva2%3A859060>
- [13] Williams, S., Ahn, C., Gunc, H., Ozgirin, E., Pearce, M., Xiong, Z. (2019). Evaluating sensors for the measurement of public life: A future in image processing. *Environment and Planning B: Urban Analytics and City Science*, 46(8): 1534-1548. <https://doi.org/10.1177/2399808319852636>
- [14] Hoffmann, E., Campelo, D., Hooper, P., Barros, H., Ribeiro, A.I. (2018). Development of a smartphone app to evaluate the quality of public open space for physical activity. An instrument for health researchers and urban planners. *Landscape and Urban Planning*, 177: 191-195. <https://doi.org/10.1016/j.landurbplan.2018.05.005>
- [15] Zhu, T. (2009). Innovation without fracture: a study of spatial negotiation in Chinese new urbanism and traditional urbanism communities. *Iowa State University*. <https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=2113&context=etd>
- [16] Yang, Q.Q. (2012). In and around Beijing with Mr. Yang and others: Space, modernisation and social interaction. *University of St Andrews*. <https://doi.org/10.17863/CAM.4522>
- [17] Yang, Q.Q. (2016). Transformation of living space in hutongs through the process of urban development. *Cambridge Journal of China Studies*, 11(1): 68-87. <https://doi.org/10.17863/CAM.4522>
- [18] Yang, Y., Wu, S.N., Huang, T.H. (2009). The Thinking of mixed use from a perspective of the hutong protection. *Forum American Bar Association*, 1203-1210. http://www.ifou.org/conferences/2009delft/proceedings/8%20New%20Approaches%20of%20Urban%20Governance/full%20papers/F046_YANG_Yang_The_Thinking_of_Mixed_Use.pdf
- [19] Hagenbjörk, L. (2011). An analyse of Chinese urban public space-Beijing as an example. *Blekinge Institute of Technology*. <http://www.diva-portal.org/smash/record.jsf?pid=diva2:832693&dswid=4762>
- [20] Lan, M. (2014). An analysis of Beijing's Hutongs and Siheyuans: An urban tree approach. *The Pennsylvania State University*. <https://etda.libraries.psu.edu/catalog/22841>
- [21] Heath, T., Tang, Y. (2010). Beijing's Hutong and Siheyuan: Conservation of an urban identity. *Proceedings of the Institution of Civil Engineers: Municipal Engineer*, 163(3): 155-161. <https://doi.org/10.1680/muen.2010.163.3.155>
- [22] Jennifer, S.M. (2010). From Hutong to hostels: Cultural tourism and the process of commodification in Beijing. *University of Pittsburgh*. <http://d-scholarship.pitt.edu/7377/>
- [23] Svensson, M. (2021). Walking in the historic neighborhoods of Beijing: Walking as an embodied encounter with heritage and urban developments. *International Journal of Heritage Studies*, 27(8): 792-805. <https://doi.org/10.1080/13527258.2020.1821240>
- [24] Akers, A.S. (2015). Neighborhood design and public life: Lessons from Beijing's Hutong and superblocks. *Columbia University*. <http://hdl.handle.net/1721.1/98924>
- [25] Aulia, D.N., Napitupulu, L.N. (2020). Study of public space activities in the main corridor of J. City Estate, Medan City, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 452(1). <https://doi.org/10.1088/1755-1315/452/1/012097>
- [26] Aliyas, Z., Jafari, K. (2020). Observational physical activity in public open spaces: Environmental determinants of physical activity intensity levels in Iran. *Global Health Promotion*, 27(3): 131-139. <https://doi.org/10.1177/1757975919875391>
- [27] Zapata, O., Honey-Rosés, J. (2020). The behavioral response to increased pedestrian and staying activity in public space: A field experiment. *Environment and Behavior*, 1-22. <https://doi.org/10.1177/0013916520953147>
- [28] Honey-Rosés, J. (2019). Measuring neighbourhood change in public space: a public life study in Poblenou, Barcelona. *Seminario Internacional de Investigación en Urbanismo*, (11). <https://doi.org/10.5821/siiu.6622>
- [29] Mattsson, J. (2019). Human behaviour & urban squares: a public life study of Kungsträdgården and Sergels Torg. *School of Architecture and the Built Environment*. <https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1333366&dswid=-2750>
- [30] Chacón-Borrego, F., Corral-Pernía, J.A., Martínez-Martínez, A., Castañeda-Vázquez, C. (2018). Usage behaviour of public spaces associated with sport and recreational activities. *Sustainability*, 10(7): 2377. <https://doi.org/10.3390/su10072377>
- [31] Van Hecke, L., Deforche, B., Van Dyck, D., De Bourdeaudhuij, I., Veitch, J., Van Cauwenberg, J. (2016). Social and physical environmental factors influencing adolescents' physical activity in urban public open spaces: A qualitative study using walk-along interviews. *PLoS ONE*, 11(5): 1-24. <https://doi.org/10.1371/journal.pone.0155686>
- [32] Li, Z., Luo, D., Lin, H., Liu, Y. (2014). Exploring the

- quality of public space and life in streets of Urban village: Evidence from the case of Shenzhen Baishizhou. *Journal of Sustainable Development*, 7(5): 162-176. <https://doi.org/10.5539/jsd.v7n5p162>
- [33] Mateo-babiano, I.B. (2012). Public life in Bangkok 's urban spaces. *Habitat International*, 36(4): 452-461. <https://doi.org/10.1016/j.habitatint.2012.04.001>
- [34] Akira, A., Hino, F., Reis, R.S., Ribeiro, I.C., Parra, D.C., Brownson, R.C., Fermino, R.C. (2010). Using observational methods to evaluate public open spaces and physical activity in Brazil, 7(Suppl 2): 146-154. <https://doi.org/10.1123/jpah.7.s2.s146>
- [35] Moreno, M. (2010). Porosity and play: Sustaining public life in New Zealand's suburban shopping centres. Victoria University. <http://researcharchive.vuw.ac.nz/handle/10063/1620>.
- [36] Simões Aelbrecht, P. (2010). Rethinking urban design for a changing public life. *Journal of Place Management and Development*, 3(2): 113-129. <https://doi.org/10.1108/17538331011062667>
- [37] Zhang, C., Lu, B. (2016). Residential satisfaction in traditional and redeveloped inner city neighborhood: A tale of two neighborhoods in Beijing. *Travel Behaviour and Society*, 5: 23-36. <https://doi.org/10.1016/j.tbs.2015.08.001>
- [38] Wang, F., Liu, J., Pan, B., Zhao, L., Zhang, M. (2012). Stuck between the historic and modern China: A case study of children's space in a hutong community. *Journal of Environmental Psychology*, 32(1): 59-68. <https://doi.org/10.1016/j.jenvp.2011.10.001>
- [39] Zhang, D. (2016). Juer hutong new courtyard housing in Beijing a review from the residents' perspective. *Archnet-IJAR*, 10(2): 166-191. <https://doi.org/10.26687/archnet-ijar.v10i2.963>
- [40] Zhang, C., Lu, B., Song, Y. (2012). Involving the community in inner city renewal: A case study of Nanluogu in Beijing. *Journal of Urban Management*, 1(2): 53-71. [https://doi.org/10.1016/S2226-5856\(18\)30060-8](https://doi.org/10.1016/S2226-5856(18)30060-8)
- [41] Jin, Y.L. (2020). Urban regeneration in the future of self-driving: a case study on Beijing's Baitasi historic area. University of Geneva. <https://archive-ouverte.unige.ch/unige:144964>.
- [42] Eli, D. (2012). Displaced Hutong. University of Cincinnati. <https://www.proquest.com/openview/dc2659b20ec2d37746601a7fae0e4c88/1?pq-origsite=gscholar&cbl=18750>.
- [43] Cinà, G., Mu, Q. (2018). Ju Er Hutong project: A rehabilitation model or an unsuccessful attempt? *Journal of Civil Engineering and Architecture*, 12(9): 629-643. <https://doi.org/10.17265/1934-7359/2018.09.003>
- [44] Adam, C. (2017). Hutong. Attempts at conservation during turbulent evolution of Beijing. *Journal of Heritage Conservation*. <https://doi.org/10.17425/WK50HUTONG>
- [45] Johnston, C.S. (2014). Towards a theory of sustainability, sustainable development and sustainable tourism: Beijing's hutong neighbourhoods and sustainable tourism. *Journal of Sustainable Tourism*, 22(2): 195-213. <https://doi.org/10.1080/09669582.2013.828731>
- [46] Wang, H.Y. (2016). Evaluation of the effects of bottom-up management in preserving values of historic hutong neighborhood in Beijing: A case study of community-based organization (CBO) - Shijia Hutong historic preservation society evaluation of the effects of bottom-up. University of Pennsylvania. http://repository.upenn.edu/hp_theses.
- [47] Zhang, D. (2006). New courtyard houses of Beijing: Direction of future housing development. *Urban Design International*, 11(3-4): 133-150. <https://doi.org/10.1057/palgrave.udi.9000173>
- [48] Chen, H., Zhang, H. (2019). Research on renovation planning of traditional Hutong - Take Beijing Juer Hutong renovation project as axample. *IOP Conference Series: Earth and Environmental Science*, 330(2). <https://doi.org/10.1088/1755-1315/330/2/022116>
- [49] Protection Planning of Beijing's Historic and Cultural Cities during the 11th Five-Year Plan Period. (2007). (Testimony of Beijing Municipal Commission of Planning and Natural Resources). http://ghzrzyw.beijing.gov.cn/zhengwuxinxi/ghcg/zxgh/201912/t20191213_1165420.html.
- [50] Protection Planning of Beijing's Historic and Cultural Cities during the 12th Five-Year Plan Period. (2011). (Testimony of Beijing Municipal Commission of Planning and Natural Resources). http://ghzrzyw.beijing.gov.cn/zhengwuxinxi/ghcg/zxgh/201912/t20191213_1165428.html.
- [51] Gu, H., Ryan, C. (2008). Place attachment, identity and community impacts of tourism-the case of a Beijing hutong. *Tourism Management*, 29(4): 637-647. <https://doi.org/10.1016/j.tourman.2007.06.006>
- [52] Huimin, G., Ryan, C. (2012). Tourism destination evolution: A comparative study of Shi Cha Hai Beijing Hutong Businesses' and residents' attitudes. *Journal of Sustainable Tourism*, 20(1): 23-40. <http://dx.doi.org/10.1080/09669582.2011.610511>
- [53] Su, M.M., Wall, G. (2019). A cross-cultural analysis of hutong tourism at Nanluoguxiang, Beijing, China: comparison between Beijing, other Chinese and international visitors. *International Journal of Tourism Anthropology*, 7(2): 89-114. <https://doi.org/10.1504/ijta.2019.101231>
- [54] Design Guidelines for the Preservation and Renewal of Historical and Cultural Blocks in Beijing. (2019). (Testimony of Beijing Municipal Commission of Planning and Natural Resources). http://ghzrzyw.beijing.gov.cn/biaozhunganli/bz/cxgh/202002/t20200220_1662949.html.
- [55] Farquhar, J. (2009). The park pass: Peopling and civilizing a new old Beijing. *Public Culture*, 21(3): 551-576. <https://doi.org/10.1215/08992363-2009-008>
- [56] Anderson, K.E. (2020). Getting acquainted with social networks and apps: it's time to talk about TikTok. *Library Hi Tech News*, 37(4): 7-12. <https://doi.org/10.1108/LHTN-10-2021-0077>
- [57] Orsini, M. (2014). Dashilar Hutong. Italy. https://scholar.google.com/scholar?hl=zh-CN&as_sdt=0%2C5&as_vis=1&q=Dashilar+Hutong&btnG=