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## **A Study on Hot Topics in Social Media of Tokyo 2020 Olympic Games**

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**Abstract.** During the Tokyo 2020 Olympic Games, Sina Weibo, as a high-frequency platform, has a wide range of topics and a large number of participants, and is the main channel for Internet users to obtain information. "People's Daily" is the media with high influence on social hot events in the wave microblog, from the opening day of the 2020 Tokyo Olympic Games to the end of the closing ceremony, among all the Olympic Games-related topics released by People's Daily, there were 343 topics with more than 50,000 likes, and 343 topics were used as hot topics for research. Among the 343 hot topics, 64 were table tennis-related topics, and table tennis was the sport with the highest attention among the hot topics. The social network method was used to quantify the People's Daily hot topics, establish a 2-mode network, study social actors as well as social structure from the perspective of relationships, and explain the structure of the 2-mode network and the influence of the macro-level structure on actors.

**Keywords.** Social Media, Tokyo 2020 Olympic Games, Social Network Analysis

### **1. Background**

With the outbreak of the New Crown epidemic, the Olympic Games, the Euros and the America's Cup, all of which were supposed to take place in 2020, have been postponed to 2021. The Olympic Games is one of the major sporting events with the highest global attention, the modern Olympic Games has undergone hundreds of years of development, the normalization of the New Crown epidemic has made human society enter a period of global risk, and the Tokyo Olympics in 2021 is held at a time of international order reorganization and frequent global risks after the epidemic, (Shi Anbin & Tong Tong, 2020) Multiple challenges from politics, economy, health and other aspects have placed higher demands on the 2021 The Tokyo Olympic Games have raised higher requirements for the conduct of the Games. (Yu, F. H., 2020) How can the Olympic Games run smoothly while ensuring the safety of epidemic prevention? How will athletes perform in stadiums that cannot be filled with spectators? How will fans who cannot be there be able to watch the games in a way? These are the questions that the world expects the Olympics to answer.

The 2020 Tokyo Olympics opens on July 23, 2021. The Tokyo Olympic Stadium will host the opening ceremony without spectators, and the events in Tokyo, Kanagawa, Chiba and Saitama prefectures will be held without spectators, making it the first ever "closed-door" Olympics. Unlike in the past, people from all over the world will be able to enjoy the cultural

characteristics of countries and cities, as well as the athletes' competitions, through broadcasted images and related reports. In the age of social media, the communication environment is complex, and social media has to a certain extent dissolved the national discourse of the Olympics. (Hu Baijing & An Ruochen) At the end of 2020, the global Internet users have reached 4.5 billion, including 3.8 billion social media users. Faced with the increasing scale of Internet users, organizations and individuals and media, brands, governments, and people all face a complex public opinion environment in the process of holding the Tokyo 2020 Olympic Games and establishing relationships with the Games. (Ji Chenglong & Yi Jiandong) Media microblogs play a highly influential role in microblog information dissemination because of their official identity attributes, professionalism and other characteristics that distinguish them from other ordinary microblogs, and because multiple types of media microblogs follow each other and carry out frequent information interaction (Chen Changfeng, 2013). In this context, Sina Weibo, as a high-frequency use platform, has a wide influence of topics and a large number of participants, and is the main channel for Internet users to obtain information. (Jiang Jing & Li Ding & Liu Yijun, 2015) "People's Daily" is a media with high influence on social hot events in wave microblogs, and this paper studies all Olympic-related hot topics released by People's Daily from the opening day of the 2020 Tokyo Olympics to the end of the closing ceremony.

## **2. Research methodology**

### **2.1 Research methodology**

Social network analysis is a sociological research method, and the study of social networks is precisely the method, the perspective of studying relationships. The greatest feature is that it considers the interdependence between individuals and is closer to realistic society. (Wang Liwei & Xing Yunfei & Zhao Dan) Sociological theory believes that society is not composed of individuals but networks, and networks contain nodes and relationships between nodes, social network analysis explores the structure and property characteristics of networks through the analysis of relationships in networks. (Ping-Liang & Zong-Li-Yong, 2016) Social network analysis is an analytical method to study the social structure and social relations, and a "social network" is a collection of social actors and their relationships. From the perspective of social network, social network analysis method can reveal the relationship-based social structure of network users. (Xiaoping Liu & Xiaoying Tian, 2018)

### **2.2 Data selection**

According to the authoritative data of Sina Weibo Data Center, you can view the overall Sina Media Influence Ranking in real time. The influence index is an indicator reflecting the overall influence trend of different industries, different people and different organizations on the microblogging platform based on the microblogging influence data of V users under the classification and comprehensive weighting calculation; (Wang Lockzhu & Ge Yan & Zhao Qian, 2018) Influence is composed of three aspects: activity, communication power and coverage. The activity represents the effective number of active blogs and retweeted comments per day; the communication power is related to the effective number of retweeted and commented tweets and the effective number of people; and the coverage level depends on the number of active followers of the microblog. In terms of influence index People's Daily ranks first and still ranks first in other aspects of influence index, as shown in Table 1. Fan volume is the number of people followed by the microblog accounts of enterprises/individuals/institutions at a certain time point, which can reflect the operation status of daily microblog accounts more objectively than the number of fans. (Luo, Yuning & Hu, Guangwei & Lu, Mingxin, 2017) In

terms of fan volume and number of microblogs, People's Daily ranks first, as shown in Table 2. This shows that People's Daily is the main media channel for Internet users to obtain information.

**Table 1 Sina All Media Influence Ranking**

Ranking	Name (of a thing)	Ranking Trends	Impact Index	Microblogging Influence	WeChat Influence
1	People's Daily (PRC Newspaper)	-	29938.23	97	100
2	Global Times	-	28806.27	92	90
3	Occupy a position of power	↑1	27017.87	67	95
4	China Newsweek (newspaper)	↓1	27006.47	83	81
5	Ye Tan	↑17	26824.91	69	82

**Table 2 Sina Followers**

Ranking	Name (of a thing)	Fan Volume	Microblogging	Industry Category
1	People's Daily (PRC Newspaper)	140044773	139165	Newsprint
2	Global Times	30296831	219633	Newsprint
3	Occupy a position of power	4.287 million	40461	Individuals
4	China Newsweek (Newspaper)	60132279	174853	Magazines
5	Ye Tan	3.636 million	14512	Individuals

In summary, this paper intercepted from the topics of People's Daily during the 2020 Tokyo Olympics, 343 topics with more than 50,000 likes as hot topics between July 23, 2021 and August 8, 2021 Beijing time, and classified by Excel according to sports as well as topics, and through statistics, the following results were obtained, as shown in Table 3.

**Table 3 Classification of Hot Topics**

Sports Event	Number (Articles)
1 Ping Pong	64
2 Track and Field (Athletics)	21
3 Shot	20
4 Swim	19
4 Dive	19
4 Opening Topics	19

As seen in Table 3, table tennis was the sport with the highest number of hot topics during the Tokyo 2020 Olympic Games and was followed by a high amount of Internet users. The second place is athletics, the third place is shooting, and the fourth place is swimming and diving as well as the opening ceremony topics. The second, third and fourth places are closer, with table tennis coming in first place by a wide margin.

### 3. Analysis and results

#### 3.1 Second-mode network

A two-part matrix representing a two-part network consists of  $g$  actors and  $h$  events, represented as a  $g \times h$  matrix, with entry 1 at position  $(i,j)$  if actor  $i$  is involved in event  $j$ ; otherwise entry 0;  $X_{x,j} = \begin{cases} 1, & \text{if actor } i \text{ is involved in event } j \\ 0, & \text{if actor } i \text{ is not involved in event } j \end{cases}$  Table 4 for events and Table 5 for actors.

**Table 4 Ranking of Individual Events (top 10)**

	1	2	3	4	5
<b>Like</b>	ping pong	ping pong	shot	track and field (athletics)	lift weights
<b>Repost</b>	national anthem	Olympic Music Video	shot	ping pong	ping pong
<b>Comment</b>	ping pong	ping pong	shot	fencing (sport)	Track and field (athletics)
	6	7	8	9	10
<b>Like</b>	fencing (sport)	gymnastic	dive	ping pong	opening session
<b>Repost</b>	opening session	Hong Kong's first gold medal	Chinese girl	lift weights	Track and field (athletics)
<b>Comment</b>	gymnastic	opening session	badminton	dive	lift weights

**Table 5 Actors**

<b>1</b>	Sun Yingsha defeats Ito Misaki	<b>5</b>	Encouraging silver medals in table tennis
<b>2</b>	Silver medal in mixed doubles table tennis	<b>6</b>	Table tennis women's team 3-0
<b>3</b>	Ma Long advances to men's table tennis singles final	<b>7</b>	China wins gold in men's table tennis team
<b>4</b>	Chen Meng wins the women's singles	<b>8</b>	Ma Long Fan Zhendong advances to men's singles final

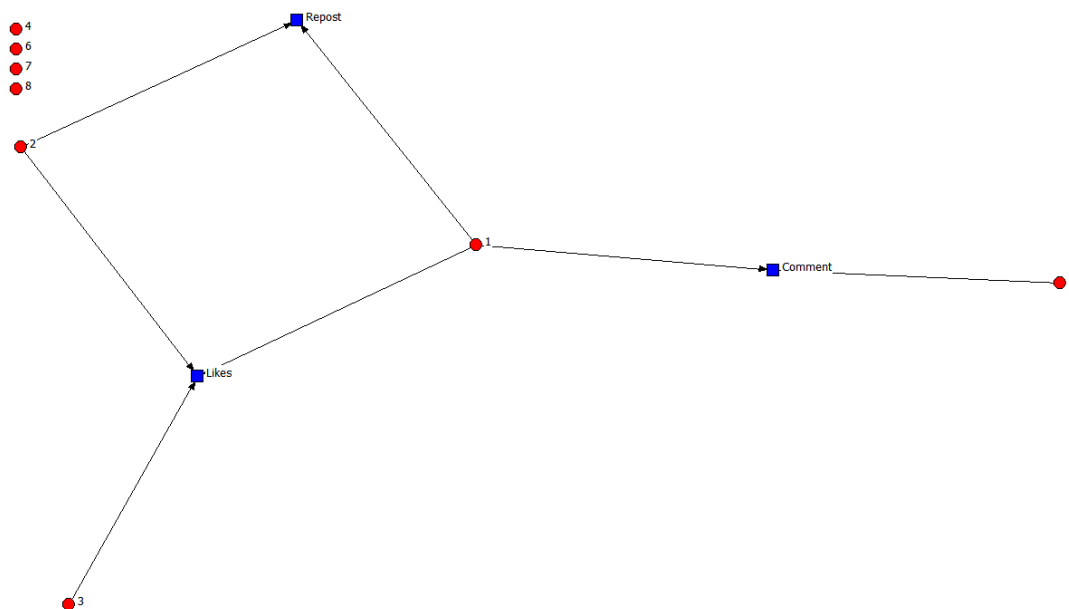
As in Table 5 the actors are the top 8 of 64 tweets about table tennis with the number of likes as the actors. As in Table 4, the three events are the number of likes, the number of comments, and the number of retweets. A two-part matrix representing the two-part network consisting of eight actors and three events is shown in Table 6.

**Table 6 Two-mode Matrix for Eight Actors and Three Events**

	likes	repost	comment	RM
<b>1</b>	1	1	1	3
<b>2</b>	1	1	0	2
<b>3</b>	1	0	0	1
<b>4</b>	0	0	0	0
<b>5</b>	0	0	1	1
<b>6</b>	0	0	0	0
<b>7</b>	0	0	0	0
<b>8</b>	0	0	0	0
<b>CM</b>	3	2	2	7

### 3.2 Social Network Analysis

A visual network diagram is generated through the functionality of UCINET, with the red origin being the actors and the blue squares being the events. As seen in Figure 1, actors 4, 6, 7, and 8 are not involved in events, and 1, 2, 3, and 5 are involved in events. 1 is the only actor involved in all three events, making it the most central actor.



**Figure 1 Two-part Network Diagram**

Of the three events, like, retweet and comment, like is the quickest and simplest operation, requiring only one touch and containing three actors, retweet requires two touches, converting the interface twice and containing two actors, and the comment operation is the most complex, requiring editing text for a long time and containing two actors. 1 Participates in three events, 2 participates in two times, 3 participates in one event, 4 does not participate in any

events, and 5 is involved in one event. 6, 7, and 8 are involved in any event. It is worth noting that 5 crosses over to 4 to participate in an event, and 5 is the only actor involved in the most complex event other than 1.

#### **4. Conclusion**

Compared to the average value of the Rio 2016 Olympic Games over the same period, CCTV-5's share of viewership during the Tokyo Games rose by 20%. Unlike television, Sina Weibo is more real-time, interactive and convenient. "Weibo is the pulse of the planet", so said Time Magazine of the US about the powerful function of Weibo in information dissemination. With the continuous development of Weibo itself, its value and power is increasingly accepted and recognised by the media. The media has developed a surprising amount of energy with the help of Weibo, largely changing people's reading habits, spreading information that has become important for people to watch on a daily basis, and popular topics that provoke discussion and communication.

Among the 343 hot topics released by People's Daily, table tennis has the highest attention, with a total of 64 hot topics released. The most important of them is Sun Yingsha's victory over Ito Misaki, the only one that all participated in the likes, comments and retweets. With the decline in heat, other table tennis hot topics in the likes, comments, retweets, respectively, ranked gradually, including encouraging table tennis silver medals, the fifth in the table tennis hot ranking, in addition to the first in table tennis heat, the only one into the comment list, more special. Due to Xu Xin Liu Shiwen unexpectedly lost to the Japanese duo Mizutani Hayabusa Ito Mimei, coupled with Ito Mimei's rampant comments on the field, resulting in the domestic fans of table tennis into a more concerned. Faced with the painful loss of the gold medal, the athletes who got the silver medal, netizens made comments to give the greatest encouragement.

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#### **References**

- [1] Chen Changfeng. Media microblogs:public opinion leaders in public events[J]. Journalism and Writing,2013,(11):83-85.
- [2] Hu Baijing, An Ruochen . Cognitive fallout, media narratives and the global imagination of the Winter Olympics [J]. Journal of Shanghai Institute of Sports, 2020 (1): 31-38
- [3] Ji Chenglong, Yi Jiandong. Operational requirements and implementation progress: a study of key areas in the preparation for the Beijing 2022 Winter Olympics [J]. Journal of Shanghai Sports Institute, 2020(2): 53-63
- [4] Jiang Jing, Li Ding, Liu Yijun. Research on the management strategy of emergency events based on microblog opinion ecology[J]. Management Review,2015,27(4):48-56.
- [5] Liu S, Tian XY. Analysis of the social network structure of media microblogs and their influence [J]. Intelligence Science, 2018(1):36-1
- [6] Luo Yuning, Hu Guangwei, Lu Mingxin. Research on the relationship between the influence of government microblogs and the characteristics of followers [J]. E-commerce, 2017 (12): 82-89

- [7] Ping R, Zong LY. Research on microblog information dissemination based on social network centrality analysis--Sina microblog as an example[J]. *Library intelligence knowledge*,2016,138 (6):92-97.
- [8] Shi Anbin, Tong Tong . Global crisis and Chinese solution: reflections on public diplomacy under the new crown pneumonia epidemic [J]. *Foreign Communication*, 2020(6):28-31
- [9] Wang Lockzhu, Ge Yan, Zhao Qian. Rough set-based evaluation method and empirical study on the influence of government microblogs [J]. *Practice and understanding of mathematics*, 2018, 48(22): 76-84
- [10] Wang ZWeiwei, Xing Yunfei, Zhao Dan. Research on the dissemination of online public opinion information in the mobile environment based on social network analysis: the topic of "haze" on Sina Weibo as an example[J]. *Library and intelligence work*,2015,59(7):14-22.
- [11] Yu Fuhai . Research on the management of uncertainty in preparation for the Tokyo Olympics in the context of the epidemic [J] *Journal of Wuhan Institute of Sports*, 2020 (7): 29-40