

The Role of China Douyin Short Video App During COVID-19

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Abstract: As of September 2021, COVID-19 is still seriously impacting people globally. To better control the epidemic, the Chinese government adopted a nationwide quarantine policy at the early stage of the discovery of COVID-19, which has significantly changed people's production and life. China's Douyin app (International version: TikTok) is an extremely influential entertainment and social tool. During COVID-19, a large number of short videos about COVID-19 appeared. Publishers included government agencies, professionals, and self-media. The content released has made Douyin a tool for people to receive COVID-19 information in addition to entertainment and social functions. This is a quantitative study. By exploring the impact of the Douyin app on Chinese college students during COVID-19, this study provides suggestions from the level of social media such as TikTok to enable Korea's epidemic prevention to be more effective. This study established variable questions such as Douyin's information perceived value, information usage channels, information awareness, anti-epidemic policy attitude, trust of public institution and preventive behavioral intention, and conducted a questionnaire survey. Using SPSS to analyze the obtained data, this study found that: 1. The short video information usage channels about COVID-19 in Douyin have a positive impact on the audience's information awareness; 2. The information perceived value in Douyin has a positive impact on the audience's information awareness; 3. Information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude; 4. Information awareness and trust of public institutions in Douyin have a positive impact on the audience's preventive behavioral intention; 5. The audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention.

Keywords: COVID-19; Douyin; Information Perceived Value; Information Usage Channels; Anti-Epidemic Policy attitude

1. Introduction

Coronavirus disease 2019 ("COVID-19") is a newly emerging respiratory disease. The disease is highly contagious. Its main clinical symptoms include fever, dry cough, fatigue, myalgia and dyspnea [1]. Although the vaccine has been vaccinated globally, as of September 2021, COVID-19 still severely affects people around the world. In order to better control the epidemic, the Chinese government adopted a nationwide quarantine policy at the early stage of the discovery of COVID-19, which has greatly changed people's production and life. China's Douyin app is different from the international version of Tiktok. Although the two business models are similar, they are in a different market environment and are regulated by different national governments. But the same thing is that both currently occupy an important position in the short video industry [2]. Because Douyin is currently one of the most popular short video apps in China, there are many related researches on Douyin, including research on Douyin platforms and users of Douyin. For example: the role of Douyin on the values of college students [3], the role of short government affairs videos in Douyin in government promotion, public opinion response, knowledge popularization, on-site restoration, policy interpretation, urban publicity, etc. [4], research on content production in Douyin, etc [5]. However, the research on Douyin and COVID-19 is still based on qualitative research, and the discussion of issues is relatively single

and limited. For example, in the context of COVID-19, how to use the Douyin platform to spread positive energy and influence the values of college students [6]. In addition, in the context of COVID-19, how short medical science videos can better disseminate professional medical knowledge to the public [7], and how to strengthen public opinion by taking "CCTV News" as an example Leading position and so on [8]. There is also an analysis of the development of live webcast marketing under the influence of COVID-19[9] and so on.

This study uses quantitative research methods. Based on the fact that a large number of short video content about COVID-19 appeared on the Douyin platform during COVID-19, information usage channels are classified, including official media, for example: news short messages issued by People's Daily, CCTV News, etc. Professionals, such as doctors, release knowledgeable information about COVID-19. Self-media, such as international students or tour guides and other individuals who are more affected by the epidemic, These contents make Douyin not only entertainment and social functions, but also a tool for people to receive COVID-19 information. On Douyin, the dissemination of information through different information channels enables the public to understand COVID-19 in an all-round way, which is of positive significance for the prevention and control of COVID-19. At the same time, it can also affect the public's information perceived value of Douyin information. Secondly, the information about COVID-19 spread through Douyin will affect the audience's information awareness, anti-epidemic policy attitude, trust of public institution, and preventive behavioral intention, which are important research questions of this research. China's current control of COVID-19 is effective, and this study can also serve as a reference for South Korea's epidemic prevention.

2. Theoretical background and literature review

2.1 COVID-19

Coronavirus disease 2019 (Abbreviation: COVID-19), is an infectious disease caused by severe acute respiratory syndrome coronavirus type 2 (abbreviation: SARS-CoV-2). At present, the initial transmission route of this disease is still under investigation. Human-to-human transmission has become the main route of transmission [10]. Covid-19 was confirmed in December 2019[11]. Observations have shown that the disease has an incubation period, and clinical manifestations usually begin less than a week later, including fever, cough, nasal congestion, fatigue and other signs of upper respiratory tract infection. On January 30, 2020, due to the continuous increase in the notification rate of cases in China and around the world, the WHO Emergency Committee declared a global health emergency [12]. The first COVID-19 vaccine BNT162b2 (Pfizer/BioNTech) was approved by the UK Medicines and Medical Products Regulatory Agency (MHRA) for Emergency Use Authorization (EUA) on December 2,2020[10]. Globally, as of 4:12 PM CEST on June 25, 2021, 179,686,071 confirmed cases of COVID-19 have been reported to WHO, including 3,899,172 deaths. As of June 23, 2021, a total of 2,624,733,776 doses of vaccine have been vaccinated [13]. Because the virus is mainly spread through oral and nasal secretions, including respiratory droplets from coughing, sneezing, and talking. Therefore, the recommended measures to prevent infection include frequent hand washing, social distance from others, isolation and quarantine, cover your nose and mouth when coughing, and avoid touching your eyes, nose, and mouth. Wearing masks in public places can be very effective in reducing the risk of transmission [10].

2.2 Douyin short video application

The Douyin app, belonging to the Chinese ByteDance company, is a social short video application software. It was launched on September 26, 2016. It was originally named A-me Music Short Video Community and was officially launched on December 10, 2016. The name was changed to "Douyin " and the logo was changed. Through the Douyin Short Video App, users can share their lives, and at the same time, they can socialize in this app and learn about various anecdotes [14]. In October 2018, China's short video platform users reached 648 million, accounting for nearly 80% of the country's Internet users [15]. China's booming short video industry is dedicated to social entertainment, news and information, and video editing [16]. The Douyin app has developed most rapidly due to its simple operation, immersive spread, and viral spread [14]. In May 2019, the Douyin app had a DAU of about 300 million in China, with a peak of 310 million and an advertising revenue of about 2.6 billion. It is currently the most popular APP in China [17].

TikTok is the international version of Douyin, two platforms from 2019 to 2020 Both have achieved sustained growth, with more than 2 billion downloads in April 2020. They are owned by the same Chinese company, but operated as two companies, taking into account the global dominance of the US and Chinese platform ecosystems, TikTok and Douyin It is unique [18]. Due to the difference in the overall environment,

although the user interface and functional infrastructure are similar, through the analysis of the platform's internal currency system and trade news, although the two business models are similar, they are in different market environments. Douyin has obviously benefited from the prosperity of China's social e-commerce market. It has a dedicated live broadcast section, forwarding (link the products sold, make the icon of the shopping cart pattern, and sell it in real time.), consignment (a link) It is more powerful to guide users to buy on other platforms such as Taobao.

Due to the different political environment, Douyin has been affected by the supervision of Chinese platforms, while the governance of TikTok's platform has been affected by many international regulatory forces. The same is that, All need to be bound by national laws and censorship systems. In addition to entertainment content, there are many "positive energy" videos in Douyin, which can be understood as playful patriotic video content, suitable for the Chinese communication environment. Tiktok has been restricted and governed in the United States, India, Australia and other countries due to the use of children and young people, privacy issues, and national security. In the "political turmoil", markets such as the United States and Australia threatened to take action against TikTok. Tiktok also made many adaptive changes and efforts for this, and still won praise from users [18]. The focus of this research is to explore the impact of Douyin app on Chinese college students during the COVID-19 period, so the following research focuses on Douyin app.

2.3 Douyin in the context of the COVID-19

A swept epidemic has made the Chinese New Year holiday long and anxious. Because the country has implemented a mandatory quarantine and epidemic prevention policy, short videos have also ushered in an explosive growth. According to data from 2020 Chinese New Year Mobile Internet War Epidemic Report, the overlap of the epidemic on the Chinese New Year has led to changes in the online duration pattern of the mobile Internet industry. Compared with the Spring Festival in 19 years, short videos accounted for more than mobile games. In addition, due to the sharp increase in short video users' demand for information on epidemics, protection, etc., news information has also risen to 9% [19]. During the epidemic, Douyin's users surged. Many of them are concerned about the COVID-19.

According to data from the China Mobile Internet database in February 2020, the average daily increase in active users during the Spring Festival holiday in 2020 compared to before the holiday top10 APP list, the first is Douyin short video, an increase of 42.73 million [19].

As of February 14, according to Cassdata, searched and entered "coronavirus pneumonia" on Douyin, and hundreds of related topics appeared. Among them, videos with the keyword "new coronavirus" alone have been viewed 21.8 billion times, with 297,000 videos; the topic "new coronavirus pneumonia" has been viewed 830 million times, with 1.4w videos, etc. [19]. Understanding the progress of the epidemic through Douyin has become an important way. In this context, it is very necessary to study the content related to Douyin and the epidemic, and it is possible to discover the role and influence of the Douyin app during the COVID-19 period in China. This also provides a reference for South Korea's epidemic prevention.

2.4 Chinese college students and Douyin

According to previous research, among Douyin users, users in the age range of 21 to 25 are the most, among which college students are a large part, reflecting that it is a popular trend for contemporary college students to obtain information and record life through Douyin. Through the use and satisfaction theory, Xie Chen and others understand college students' use behavior of the Douyin app by major and age, including likes, comments, and content viewing. Analyze the motivations of leisure and entertainment, access to information, and social needs, and point out that college students will be affected by Douyin's knowledge and aesthetics, interpersonal communication, daily life, behavior habits, etc., and analyze the true spirit of college students in modern life and practice status [20]. Gong Xiaomei and others analyzed the main reasons why Douyin short videos are popular among college students, including positioning needs, social needs, expression needs, music needs, comment needs, practical needs, etc., and believe that the impact of Douyin on college students is two-sided and positive. Levels include conducive to the realization of self-worth, stimulating creative inspiration, transmitting positive energy, broadening horizons, and enriching the taste of life. The negative aspects include easy to indulge, high cost of imitation, invasion of privacy, and spread of negative values. He also pointed out that Douyin should improve the anti-addiction system, increase innovation, and strengthen supervision [21]. This is the same as most of the qualitative research on "college students and Douyin", which mostly focuses on the impact of college students' use of Douyin on their values.

This research adopts quantitative research. College students have certain knowledge literacy and ability to make rational judgments, and as China's future talent reserve group, observing the use of Douyin by college students under the background of the COVID-19 has more research value.

In the process of selecting variables, combined with previous research and the direction of this research, measuring the user's information perceived value of Douyin is the basis of this research. Only on the basis of users' recognition of the Douyin app, can the content of Douyin affect people. The behavior reflected in this study is that people choose to continue to receive information about the COVID-19 on Douyin. Secondly, the short video content about COVID-19 in Douyin is diverse and can be divided into different information usage channels. Finally, this research needs to explore the relationship among the audience's information awareness, anti-epidemic policy attitude, trust of public institution, and preventive behavioral intention.

To this end, this research has set the following research content.

Table 1. Research questions and hypotheses

Research questions and hypotheses	
Research question 1:	How many types of short video content about COVID-19 in Douyin can be divided into information usage channels?
Research question 2:	What are the factors that constitute the classification of information perceived value in Douyin?
Hypothesis 1:	The short video information usage channels about COVID-19 in Douyin have a positive impact on the audience's information
Hypothesis 2:	The information perceived value in Douyin has a positive impact on the audience's information awareness
Hypothesis 3:	Information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude
Hypothesis 4:	Information awareness and trust of public institution in Douyin have a positive impact on the audience's preventive behavioral intention
Hypothesis 5:	The audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention

3. Materials and Methods

3.1 Research design

In order to achieve the research purpose, this research adopts the research method that combines literature research and empirical research. First of all, because COVID-19 is still undergoing mutation development, it is currently only possible to sort out the status quo of COVID-19 through existing relevant literature research and reports. Secondly, sort out related variables through literature research. Finally, the empirical research will develop questionnaires based on literature research, and then use the Internet questionnaire survey platform "Questionnaire.com" to distribute questionnaires to Chinese college students Douyin users, and finally use SPSS for empirical analysis.

3.2 Selection of variances

3.2.1 Survey Objects and Material Collection

The survey object of this research is selected as the group of Chinese college students, because the college students have certain knowledge literacy, have the ability of rational judgment, and as the future talent reserve group in China, the analysis of college students has more research value. In addition to basic demographic issues such as age and gender, according to China's national conditions, this research divide majors into natural

sciences (science, engineering, medicine, agriculture) and humanities and social sciences (literature, History, philosophy, economics, management, law, pedagogy, art). In order to further cooperate with the research purposes, the survey subjects will select the group of college students who have obtained COVID-19 information through Douyin during the COVID-19.

3.2.2 Information usage channels

The Chinese government attaches great importance to the development of official media, including Douyin accounts for government affairs at all levels. According to The 46th China Statistical Report on Internet Development as of June 2020, governments at all levels in China have opened 25,313 government Douyin accounts. 31 provinces (autonomous regions and municipalities) have all opened government affairs Douyin accounts. Among them, the province with the largest number of government Douyin accounts is Shandong, with a total of 1,631[15]. It can be seen that the official media pays great attention to the media channel of Douyin.

During the COVID-19 period, on the Kuaishou and Douyin short video platforms, the average number of fans of the eight media outlets increased by 13.6 million, and the average number of fans of 38 broadcasting and television agencies at or above the provincial level increased by 2.61 million [22]. Secondly, according to Cass data: "increased fans in 2020 Among the 30 fastest accounts", eight are official media. People's Daily and CCTV News rank first and second with 66.15 million fans and 64.22 million fans. In addition, the medical and health category has also received a lot of fan attention. For example, the number of fans of "Yi Lu Xiangqian Weizi" and "Xian He Uncle Zhang Wen He" are 17.24 million and 16.78 million, respectively [23]. We selected these 8 official media as research representatives. They are: People's Daily, CCTV News, Sichuan Watch, China Changan Net, Hubei Daily, China Daily, News Express, Guangming Daily.

In addition to relevant news short messages and news broadcasts released by official media, COVID-19 information contains a large number of relevant information released by hospitals and doctors. Representatives are the construction of Wuhan Leishenshan and Huoshenshan hospitals, academician Zhong Nanshan's views and suggestions on the epidemic, and the medical assistance teams of hospitals in the hardest-hit areas of the epidemic. In addition, we enter "COVID-19, doctor, hospital" in Douyin, and select doctors who have posted information about the epidemic. Dr. Hongwen Zhang (Director of the Department of Infectious Diseases, Huashan Hospital Affiliated to Shanghai Fudan University) with 225.9w followers, and Dr. Changping Yu (Deputy Chief Physician of the Department of Respiratory Medicine, Hubei People's Hospital) with 929,000 followers. Taking into account the video characteristics of Douyin short videos, the audience's attention and impression of pictures will be greater than the attention and impression of names. When setting up the question, we need to correspond to the corresponding picture to get a more accurate answer.

Therefore, the professionals we selected are: Academician Zhong Nanshan, Leishen Mountain and Huoshenshan Mountain Hospitals, the medical assistance teams of hospitals in the hardest-hit areas of the COVID-19, Dr. Zhang Wenhong, Dr. Yu Changping, "Yi Lu Xiang Qian Wei Zi", and "Xian He Uncle Zhang Wen He". In order to better understand, we take "Academician Zhong Nanshan" and "the medical assistance teams of hospitals in the hardest-hit areas of the COVID-19" as examples to show the pictures. All the pictures are from the screenshots.

Finally, self-media, personal information about COVID-19 released during the epidemic, including international students, people overseas (Chinese or foreigners) during the epidemic, and people in special positions during the epidemic, such as takeaways, couriers, and tour guides.



Figure 1: Academician Zhong Nanshan(L)

Figure 2: the medical assistance teams of hospitals in the hardest-hit areas of the COVID-19(R)

3.2.3 information perceived value

"The application of information media is not pure time consumption, but the use of information media to maximize the use of time. this is an amateur activity that improves the quality of life." It conforms to the characteristics of Douyin and uses the shortest time to narrate information. "The audience judges their demand for a certain type of media by evaluating the value of information, which in turn influences their behavior." [24]. In combination with the COVID-19, isolation has changed people's lifestyles, and the number of downloads of Douyin has increased. Because official media, professional media, and self-media are all publishing information about the COVID-19 on Douyin, people choose to use Douyin. Understanding the COVID-19 information will be more comprehensive and closer to life. Therefore, it will affect people's behavior and choose to continue to receive COVID-19 information on Douyin. Zeithaml (1988) believes that perceived value is a customer's assessment of the overall utility level of a product or service. Customers usually infer it based on the difference between the benefits and costs of consuming the product or service [25]. Sweeney and Soutar (2001) define a broader sense of value: emotional value, social value, price function value, and quality function value. Consumers' perceived value in the mobile Internet environment is also worthy of attention [26]. J. Q. Fan (2012) organizes the information perceived value into the following table [27]:

Table 2. previous research 1: perceived value

	Factors	Questionnaire
perceived value	Social value	1.Can communicate with people who share the same beliefs 2.Can communicate with people who have common ideas 3. Can communicate with like-minded people
	Economic Value	1. The price of mobile internet service is reasonable 2. Mobile Internet services can provide adequate services based on their pricing 3. Mobile Internet service is value for money
	Emotional value	1. Using mobile internet is a very pleasant thing 2.Using mobile internet is a very interesting thing 3.Using mobile internet makes me enjoy
	Functional value	1. Using mobile Internet services saves time and effort 2. Using mobile internet can achieve my purpose more effectively 3. Using mobile internet services is more useful

In addition, the perception of information value should also include information acceptance. Social networking sites are not only for simple online social relationship formation and mutual communication, but also play the role of knowledge sharing venues. In a pilot study on the influence of social relations, trust and information acceptance on SNS on tourism information sharing willingness, trust has a positive impact on information acceptance and willingness to share information, and the measurement questions are given: 1. I agree Information and comments on social media. 2. Comments and information make my travel plans easy. 3. The comments and information on social media make my travel decisions and planners effective [28]. Under the platform of Douyin, the positive influence of information acceptance on the will is an important part of measuring the perceived value of the audience's information. Therefore, combined with the subject of this research, we set the information perceived value of Douyin to four items: Social value, emotional value, functional value, Information acceptance.

3.2.4 Information awareness

Educating the public to raise health awareness and increase disease knowledge is very important. Information exchange and media use are very suitable for providing professional information to the public, reducing public panic, disseminating health knowledge, and expressing gratitude for the public's cooperation [29].

This time it is very important to spread information about COVID-19 to the public through Douyin, and it is necessary to measure the public's awareness of COVID-19. According to previous research, we found that different countries have different perceptions of information about COVID-19 and have distinct national characteristics. For example, in a questionnaire survey in Saudi Arabia, questions such as "Stopping Umrah and pilgrimage activities can limit the spread of the virus." [30]. However, considering the subjects of the survey, this study chooses China's information awareness measurement problem on COVID-19. According to the clinical guidelines for community management of COVID-19, the National Health Commission of the People's Republic of China, the COVID-19 knowledge questionnaire was developed by the authors of the first study. This questionnaire has 12 questions: 4 clinical manifestations, 3 transmission paths, and 5 questions about the prevention and control of COVID-19. This measurement problem is in line with the research theme of this study [1].

3.2.5 Anti-epidemic policy attitude

Awareness affects attitudes, and lack of epidemiological awareness often leads to indifferent attitudes, which may adversely affect preparations for these challenges. This has been proved by many previous studies. For example, health professionals have better cognition, so they have a positive attitude towards epidemics, which is manifested as low-level anxiety. Similar research is also found among Nigerian students who have a negative attitude towards the epidemic due to insufficient knowledge about Ebola virus infection [31]. The anti-epidemic policy attitude regarding COVID-19 has specific measurement issues in the previous research. Including closing land, sea and airports can reduce the spread of the virus, staying at home can help reduce the spread of the virus, stopping schools and universities can reduce the spread of the virus, and closing shopping malls can reduce the spread of the virus [30]. At the same time, considering the subjects of the survey, this study supplements the measurement issues related to Chinese residents' anti-epidemic policy attitude towards COVID-19, including the eventual success of controlling COVID-19 and China's ability to win the battle against the COVID-19 virus [1].

3.2.6 Trust of public institution

Trust of public institution belongs to the discussion category of social capital, and the discussion about social capital originated from the discussion of structural sociology centered on Bourdieu. In recent years, economics, political science, public administration, pedagogy, and communication phenomena have been analyzed. Bourdieu (1986) regards social capital as an institutionalized system of mutual recognition and intimacy. The sum of actual or potential resources associated with the network in the relationship [32]. A previous study has shown that discussions on the relationship between the media and social capital have recently begun to pay attention to the relationship between the Internet and social capital. Research regards social capital as a level of trust. "Trust of public institution" refers to the degree of people's trust in public institutions. As a result, you usually need to understand the people, organizations or institutions described below to some extent. The measurement question of the study is "Do you trust?", and each item is scored on a 5-point scale (from "I

don't trust at all" to I am very confident").On the basis of the Korean administrative system, The research investigated the prosecutors and police, the Supreme Court, the National Assembly, political parties, presidents, general legislators, civic groups, labor unions, large companies, small and medium enterprises, mainstream media (Central Daily News, terrestrial broadcasting), the Internet, newspapers, and portals [33].

On this basis, the scope of measurement determined by this study includes: Chinese authorities (such as: the National People's Congress and its Standing Committee, the People's Congress and its Standing Committee, etc.), Chinese administrative agencies (Such as: the State Council, people's governments at all levels), China's military agencies (such as the Central Military Commission of the People's Republic of China and its subordinate Military Commission General Office, Military Commission Joint Staff, etc.), official media (such as People's Daily, CCTV, etc.) News, etc.) and hospitals.

3.2.7 Preventive behavioral intention

Through previous research, we found that information awareness of knowledge affects actions. Many previous studies have mentioned that knowledge acquisition and attention level are key factors related to appropriate prevention behavior [34]. A Japanese study found that people who are careful to avoid the flu are more likely to take preventive behaviors, such as washing their hands, using hand sanitizers, avoiding contact with their faces, gargle, and obtaining flu information. In the spread of a pandemic, masks are used to prevent infection, and hand washing is also a mature method to prevent infection. The effect of gargle is to prevent respiratory tract infections. Using water to gargle can protect against upper respiratory tract infections. Additional information about public awareness and preventive behaviors, such as social distancing and obedience to isolation arrangements can also prevent the spread of infection, so measurement issues include washing hands, using hand sanitizer, avoiding face contact, and actively gargle. Maintain social distancing and obey isolation arrangements [35].

4. Results

4.1 Characteristics of specimens

The questionnaire will be distributed on June 15, 2021, and the deadline is July 11, 2021. 576 questionnaires have been received. 261 questionnaires that "have not obtained epidemic information through Douyin" are deleted, and those within 2 minutes are deleted. There are 49 pieces of trust data and 11 pieces of unreliable data more than 10 minutes. Finally, 255 pieces of data are obtained. According to the demographics, the following table is obtained. The characteristics of the data are: (n=255)

Table 3: Characteristics of specimens

		Frequency	The percentage (%)
Gender	Male	58	22.7
	Female	196	76.9
Age	Under the age of 18,	2	0.8
	At the age of 18 to 22	184	72.2
	More than 22 years old	69	27.1
Major	Natural Science (Science, Engineering, Medicine, Agriculture)	45	17.6
	Humanities and Social Sciences (Literature, History, Philosophy, Economics, Management, Law, Education, Art)	210	82.4

Duration of Douyin use	Within half an hour	65	25.5
	Half an hour to an hour	105	41.2
	An hour to two hours	48	18.8
	More than two hours	37	14.5
Total		255	100

4.2 Answer the research questions through factor analysis

4.2.1 Research question 1: How many types of short video content about COVID-19 in Douyin can be divided into information usage channels?

Table 4: Classification of information usage channels of COVID-19 short video content in Douyin after factor analysis

Factors	Questionnaire	Factor loading	Communality	Eigen value	% of Variance	Cronbach's alpha	KMO
Official media	Q1:I have seen "People's Daily" publish a lot of information related to the epidemic on Douyin.	.76	.79	5.42	52.16	.95	.91
	Q2:I have seen "CCTV News" publish a lot of information related to the epidemic on Douyin.	.76	.83				
	Q3:I have seen "Sichuan Guancha" publish a lot of information related to the epidemic on Douyin.	.76	.71				
	Q4:I have seen "China Changan Net" publish a lot of information related to the epidemic on Douyin.	.77	.81				
	Q5:I have seen "Hubei Daily" publish a lot of information related to the epidemic on Douyin.	.78	.87				
	Q6:I have seen "China Daily" publish a lot of information related to the epidemic on Douyin.	.84	.82				
	Q7:I have seen "News Express" publish a lot of information related to the epidemic on Douyin.	.76	.86				
	Q8:I have seen "Guangming Daily" publish a lot of information related to the epidemic on Douyin.	0.81	0.83				
self-media	Q16: I have seen a lot of information related to the epidemic released by "students abroad" on Douyin.	.81	.74	4.18	64.04	.93	
	Q17: I have seen a lot of information related to the epidemic released by people who were overseas (Chinese or foreigners) during the epidemic on Douyin.	.82	.77				
	Q18: I have seen a lot of information related to the epidemic released by "Take-away member" on Douyin.	.82	.83				

	Q19: I have seen a lot of information related to the epidemic released by “couriers” on Douyin.	.81	.82				
	Q20: I have seen more information related to the epidemic released by “tour guides” on Douyin.	.74	.81				
professional	Q9: I have seen a lot of information related to “Academician Zhong Nanshan” on Douyin. (Picture1)	.86	.80	3.71	74.81	.92	
	Q10: I have seen a lot of information about “Leishen Mountain, Vulcan Mountain Hospital” on Douyin. (Picture 2)	.89	.89				
	Q11: I have seen a lot of information on “the medical assistance teams of hospitals in the hardest-hit areas of the COVID-19” on Douyin. (Picture3)	.87	.85				
	Q12: I have seen a lot of information related to the epidemic released by "Dr. Zhang Hongwen" on Douyin. (Picture 4)	.71	.75				
Medical common sense science popularizer	Q13: I have seen more information related to the epidemic released by "Dr. Yu Changping" on Douyin. (Picture 5)	.70	.84	2.77	80.41	.90	
	Q14: I have seen a lot of information related to the epidemic released by "Yi Lu Xiang Wei Zi" on Douyin. (Picture 6)	.70	.78				
	Q15: I have seen a lot of information related to the epidemic released by "Uncle Zhang Wenhe" on Douyin. (Picture 7)	.68	.71				

Therefore, using the method of Varimax for factor extraction and rotation, through factor analysis, the information usage channels of the short video content related to COVID-19 in Douyin can be divided into 4 categories. According to the characteristics, we named them: official media, self-media, Professional, Medical common sense science popularizer.

4.2.2 Research question 2: What are the factors that constitute the classification of information perceived value in Douyin?

Table 5: Classification of information perceived value in Douyin after factor analysis

Factors	Questionnaire	Factor loading	Communality	Eigen value	% of Variance	Crobach's alpha	KMO
Emotional value	Using Douyin is a very pleasant thing.	.86	.91	3.25	27.10	.95	.90
	Using Douyin is a very interesting thing.	.89	.92				
	I really enjoy using Douyin.	.82	.89				

Social value	On Douyin, I can communicate with people who share the same beliefs.	.88	.92	3.05	25.43	.97
	On Douyin, I can communicate with people who have common ideas.	.91	.95			
	On Douyin, I can communicate with like-minded people.	.87	.92			
Functional value	Using Douyin to receive information saves time and effort.	.63	.84	1.99	16.53	.93
	Using Douyin can achieve my purpose more effectively.	.74	.89			
	It is more useful to use Douyin to receive information.	.71	.86			
Information acceptance	I agree with the information and comments released by the official media on Douyin.	.79	.78	2.24	18.64	.83
	The information and comments about the epidemic on Douyin made it easy for me to receive information about the epidemic.	.80	.83			
	The information and comments about the epidemic on Douyin are effective for my epidemic prevention decisions and plans.	.74	.82			

Therefore, using the method of Varimax for factor extraction and rotation, through factor analysis, the information perceived value can be divided into 4 categories, which we named according to the characteristics, emotional value, social value, functional value, and information acceptance.

4.2.3 Correlation analysis

Table 6: Correlation analysis

Variational information	1	2	3	4	5	6	7	8	9	10	11	12
Official media	1											
self-media	.55**	1										
professional	.51**	.44**	1									
Medical common sense science popularizer	.55**	.69**	.54**	1								
Emotional value	.51**	.35**	.29**	.20**	1							
Social value	.59**	.47**	.26**	.36**	.55**	1						

Functional value	.59**	.46**	.37**	.30**	.77**	.66**	1					
Information acceptance	.53**	.40**	.39**	.29**	.56**	.56**	.59**	1				
Information awareness	.27**	.17**	.44**	.13*	.31**	.16*	.21**	.31**	1			
Anti-epidemic policy attitude	.32**	.31**	.36**	.29**	.23**	.24**	.26**	.26**	.59**	1		
institutional trust	.21**	.11	.33*	.13*	.12*	.11	.14*	.25**	.49**	.41**	1	
Preventive Behavioral Intention	.12	.02	.31**	.07	.06	-.04	.02	.16*	.45**	.34**	.71**	1

4.2.4 Hypothesis Verification

Regression analysis was used to conduct hypothesis testing, and the results were as follows:

Hypothesis 1: The short video information usage channels about COVID-19 in Douyin have a positive impact on the audience’s information awareness.

Table 7: regression analysis

Factors	Information awareness			
	B	t	VIF	P
Official media	.07	1.71	1.71	.09
self-media	.03	.60	2.06	.55
professional	.27	6.79	1.56	.00
Medical common sense science popularizer	-.11	-2.76	2.25	.01
R ²	.22			

Because is greater than ±1.96, P is less than 0.05, and VIF is less than 10, a positive value of B has a positive effect, and a negative value of B has a negative effect. Therefore, the short video content about COVID-19 released by professionals in Douyin has a positive impact on the audience's information awareness. The short video content about COVID-19 released by Medical common sense science popularizer in Douyin has a negative impact on the audience's information awareness.

Hypothesis 2: The information perceived value in Douyin has a positive impact on the audience's information awareness.

Table 8: regression analysis

Factors	Information awareness			
	B	t	VIF	P
Emotional value	.16	3.23	2.53	.00
Social value	-.04	-.97	1.91	0.33
Functional value	-.06	-1.16	3.08	0.25

Information acceptance	.17	3.36	1.73	.00
R²	.14			

Because is greater than ± 1.96 , P is less than 0.05, VIF is less than 10, positive B value has a positive effect. Therefore, Emotional value has a positive impact on the information awareness of Douyin audiences. Information acceptance has a positive impact on the information awareness of Douyin audiences.

Hypothesis 3: Information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude.

Table 9: regression analysis

Factors	Anti-epidemic policy attitude			
	B	t	VIF	P
Information awareness	.76	8.97	1.31	.00
institutional trust	.16	2.82	1.31	.01
R²	.37			

Because is greater than ± 1.96 , P is less than 0.05, VIF is less than 10, positive B value has a positive effect. Therefore, Information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude.

Hypothesis 4: Information awareness and trust of public institution in Douyin have a positive impact on the audience's preventive behavioral intention.

Table 10: regression analysis

Factors	Preventive Behavioral Intention			
	B	t	VIF	P
Information awareness	.16	2.59	1.31	.01
institutional trust	.53	12.98	1.31	.00
R²	.52			

Because is greater than ± 1.96 , P is less than 0.05, VIF is less than 10, positive B value has a positive effect. Therefore, Information awareness and trust of public institution in Douyin have a positive impact on the audience's preventive behavioral intention.

Hypothesis 5: The audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention.

Table 11: regression analysis

Factors	Preventive Behavioral Intention			
	B	t	VIF	P
Anti-epidemic policy attitude	.28	5.68	1.00	.00
R²	.11			

Because t is greater than ± 1.96 , P is less than 0.05, VIF is less than 10, positive B value has a positive effect. Therefore, the audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention.

5. Discussion and Conclusions

This research completed the research question through factor analysis, correlation analysis, and regression analysis. The information usage channels of short video content related to COVID-19 in Douyin were divided into 4 categories, official media, self-media, professional and Medical common sense science popularizer. This is more detailed than our previous expectations. The information perceived value is divided into four categories, namely emotional value, social value, functional value, and information acceptance.

Through multiple regression analysis, we verified 5 hypothetical results: 1. The short video information usage channels about COVID-19 in Douyin have a positive impact on the audience's information awareness; 2. The information perceived value in Douyin has a positive impact on the audience's information awareness; 3. Information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude; 4. Information awareness and trust of public institution in Douyin have a positive impact on the audience's preventive behavioral intention; 5. The audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention.

The most important finding of this research is that the audience's information awareness is related to information usage channels and information perceived value. Information awareness and trust of public institution have positive effects on anti-epidemic policy attitude and preventive behavioral intention. Specifically, from the analysis results, first, the short video information usage channels about COVID-19 in Douyin have a positive impact on the audience's information awareness, especially the short video content about COVID-19 released by professionals. It has a positive impact on the audience's information awareness.

It also means that in the context of COVID-19, China's Douyin is more than just an entertainment tool. Nearly 55% of people in the survey have used Douyin to obtain COVID-19 information and learn about epidemic prevention through videos posted by professionals in Douyin. Since the Chinese government has adopted a series of policies in recent years, including anti-corruption, crackdown on the underworld and other measures, it has effectively established a positive and positive government image. In addition, many positive official platforms have been established in douyin, which enhances the trust of the public institution of the government. College students are able to accept the government's epidemic prevention policies positively, actively cooperate, and make relevant preventive behaviors, including understanding and cooperating with nucleic acid testing, and accepting isolation. Chinese college students are extremely mobile during the beginning of school and vacation time each year. This is a challenge to the prevention of COVID-19. However, the continuous penetration of COVID-19 information awareness from the douyin level has positive implications for anti-epidemic policy attitude and preventive behavioral intention. Given that China's current COVID-19 prevention work is relatively good, taking Douyin as an example, popularizing COVID-19 prevention knowledge from young people's daily social apps is worthy of South Korea's thinking and learning.

Second, the perceived value of information has a positive impact on information awareness, especially information acceptance and emotional value. From the perspective of information acceptance, this supplement proves our previous analysis. The establishment of a positive image of the Chinese government in the official media in recent years has made the audience more agree with the information released by the official media, which has a positive impact on the level of information awareness. From the perspective of emotional value, using Douyin happily will enable the audience to better learn about COVID-19 prevention knowledge. Douyin has its own advantages. It is not a serious information broadcast. There are many short videos about COVID-19 in Douyin. It is very humorous and interesting. For example, there are short videos made with easy music to express knowledge about COVID-19 prevention through painting, and short videos with humorous music and pictures of nurses doing nucleic acid testing for everyone. Enable the audience to learn COVID-19 prevention knowledge in a relaxed and happy mood.

Third, information awareness and trust of public institution in Douyin have a positive impact on the audience's anti-epidemic policy attitude and the audience's preventive behavioral intention. Through exposure to information about COVID-19 on Douyin, the audience's awareness of COVID-19 has increased. At the same time, positive publicity has increased the audience's trust of the government, media, and hospitals, which makes The audience has a positive anti-epidemic policy attitude, and has strengthened the audience's preventive behavioral intention, actively cooperating with the country's epidemic prevention arrangements, including

consciously wearing masks and self-isolation and other related preventive behaviors. This can also have a positive effect on the control of COVID-19. Fourth, the audience's anti-epidemic policy attitude has a positive effect on preventive behavioral intention. Through research, it has been found that Chinese college students generally have a positive anti-epidemic policy attitude, which affects their active anti-epidemic behaviors, and that with the family as a unit, it will also affect more people.

Generally speaking, in the context of COVID-19, due to factors such as social distance, the usage of social apps such as Douyin and tiktok has increased unabated. Make good use of these platforms, in terms of different information usage channels and information perceived value. Enhance the audience's information awareness about COVID-19, and cooperate with the trust of public institution to help influence the audience's anti-epidemic policy attitude, help improve preventive behavioral intention, and help the COVID-19 prevention work. This study also found that the positive image established by the government is very important, including establishing official platforms that are trusted by the people on platforms such as douyin and tiktok. While spreading COVID-19 related knowledge, it can make the audience have a positive anti-epidemic policy attitude, and affect the audience's preventive behavioral intention. Finally, this study plays a certain role in the prevention and control of infectious diseases in the future. Similar to SARS, COVID-19 and other serious infectious diseases may still break out in the future, so we can sort out the experience from this study and apply it to future health transmission.

Shortcomings and improvement directions of this research: The research objects of this research are concentrated on Chinese college students who have obtained COVID-19 information through Douyin. It is persuasive in this research, but in future research, the sample can be expanded to Chinese people of all ages. The possible results will be different. There can be more variables involved, including national self-confidence. Research in this direction will make the research more convincing. Further research can also examine the attitude of vaccination and so on.

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