

Research on Evaluation and Improvement of Government Short Video Communication Effect Based on Big Data Statistics

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Abstract—Mainstream media is no longer the only way for people to obtain information, and the official media no longer has absolute control. People can choose the form and content of receiving information according to their preferences, which poses a new challenge to the government departments that have always been serious. From the beginning of short video to its prosperity, the government has shown great interest in its characteristics and functions. It has started to layout short video of government affairs on platforms such as Tiktok and Kwai, opened accounts one after another, and actively participated in the production and dissemination of content. Through the continuous launch of well-designed "hot money", the popularity of government affairs short videos on Tiktok and other platforms continued to rise, harvested a large number of fans, attracted social attention, and also brought good results and repercussions. This paper proposes an optimization design scheme for the evaluation and improvement of the dissemination effect of government short video based on big data statistics. The basic situation of government video is obtained through content analysis, and then the judgment coefficient and linear regression in big data statistics are used to extract common factors to improve the dissemination effect of government short video, so as to improve the dissemination influence of government short video. Finally, simulation test and analysis are carried out. Simulation results show that the proposed algorithm has certain accuracy, which is 8.24% higher than the traditional algorithm. Carrying out the research on the promotion planning and design with the dissemination of short videos of government affairs as the core has important practical guiding significance for guiding local grass-roots governments to build public services and public feedback.

Keywords—Big data statistics; short videos of government affairs; communication effect; linear regression; mainstream media

I. INTRODUCTION

The development of the times has promoted the progress of technology, which makes the speed of information dissemination faster and faster, and makes the content more and more [1]. In order to better catch people's attention, mass media was born with mobile short videos. Short video refers to a new video form with playback duration of less than five minutes, which can be played, shot and edited through mobile intelligent terminals, and can be shared in real time and seamlessly on social media platforms [2]. As the pace of life is getting faster and faster, people begin to pay attention to the

grasp of fragmented time. The emergence of mobile short videos meets the fragmented reading habits of the public, and also helps the new media of government affairs find a new way of political communication [3]. To improve the work of news and public opinion to a new strategic height of national governance, and in the context of the rapid development of Internet technology, the work of news and public opinion needs to pay attention to the use of new media [4]. In recent years, Party committees and governments at all levels and social groups have set up government microblogs and government official account as important government communication platforms [5]. At the same time, in view of the rise of short video and the expansion of its communication power and influence, Party committees, governments and mass organizations have settled in the short video platform, striving to create a new highland of government communication [6]. Information has become complex and difficult to distinguish between true and false. The public opinion space presents a new state of active thinking and collision of ideas. The media form carrying information and the technology of expressing information are changing with each passing day. The work of news and public opinion is facing difficult challenges and major opportunities, which poses a severe test for the government to create a good public opinion environment and grasp the requirements of Ideological and political leadership [7].

With the rapid development of short video platform represented by Tiktok, the way people obtain information has changed. More and more government agencies have settled in Tiktok short video platform. With the entertainment and light transmission characteristics of Tiktok short video platform, and giving full play to the infectious communication advantages of the combination of short video sound and painting, the dissemination of government information will be fragmented, focused and entertained [8]. Statistics is a discipline that infers and even predicts the specific situation of the measured object through the collection, collation, analysis and description of data and information [9]. Statistics is widely used in practical work, and its data collection methods and statistical analysis methods are widely used in all walks of life [10]. As a new information processing and analysis method developed with the Internet and information systems, big data also adopts certain statistical analysis methods, but it is obvious that the current big data still lacks more and more professional statistical analysis methods. In addition, big data can inspire

statistical work, and then inject some innovative thinking into statistical work, which is more conducive to the implementation of statistical work. In view of the advantages of big data statistics, this paper adopts the method of coefficient determination and linear regression in big data statistics in order to reduce the execution cost of the algorithm. Through practice, it is proved that this combination can not only reduce the calculation time, but also improve the quality and efficiency of government short video transmission optimization.

With the continuous upgrading of user demand, the short video platform has become the most popular political news public opinion field after the "two wechat ends". Among them, the "Tiktok" short video platform has the closest cooperation with government departments, and a large number of government departments have established communication positions in "Tiktok"[11]. Compared with the government news release mode in the form of pure text or graphics, short videos are more timely, more dense, more convenient to browse, more intuitive and understandable, and the social interaction experience caters to the audience's needs for information selection and self-expression. Where users gather is where the good voice of the party and government should be spread [12]. With the vigorous development of new media for government affairs, it is very urgent and necessary to adapt to the form of policy publicity in the new era, improve the efficiency of information transmission, optimize the effect of public opinion guidance, and innovate the governance mode. Relying on the authority of the official account in the social platform, it is necessary to publish authoritative news, establish a good image, and transmit positive energy through text, pictures, videos and other forms [13]. This paper establishes a feature reconstruction model for the evaluation of the dissemination effect of government short video, combs the dissemination effect and influencing factors of government short video through content analysis, analyzes the main factors by using the linear regression of big data statistics, and extracts the fuzzy feature quantity of government short video. Its innovation lies in:

- 1) This paper adopts the linear regression method in big data statistics in order to reduce the execution cost of the algorithm.
- 2) Using content analysis method, the research design is carried out according to the research paradigm of content analysis method. Referring to the influence evaluation indicators used in relevant research, this paper puts forward the parameter indicators needed to study the short video of government affairs.

This paper studies the optimization design of the dissemination effect of government short video. The architecture is as follows:

Section I is the introduction. This part mainly expounds the research background and significance of government short video communication optimization, and puts forward the research purpose, method and innovation of this paper. Section II mainly summarizes the relevant literature, summarizes its advantages and disadvantages, and puts forward the research

ideas of this paper. Section III is the method part, which focuses on the optimization design method combined with content analysis and big data statistics. Section IV is the experimental analysis. In this part, experimental verification is carried out on the data set to analyze the performance of the model. Section V, conclusions and prospects. This part mainly reviews the main contents and results of this study, summarizes the research conclusions and points out the direction of further research.

II. RELATED WORK

Building a service-oriented government advocates simplifying administration and delegating power, and digital government affairs are increasingly showing the characteristics of convenience, humanization and intelligence, which further improves the efficiency of government services, shapes a good government image, and becomes an important channel for the government to serve the people, which is respected and accepted by government departments at all levels.

After sorting out the operation form, information release and public response of the central Tiktok account of the Communist Youth League, genton m g and sun y, according to the public's feelings about the government image of this Tiktok account, they concluded that Tiktok government affairs short video should meet the actual needs of the majority of the people, strengthen its control, and strive to improve the quality of publicity. Government affairs publicity platforms should also be diversified and use more new models [14]. Sangalli l m took the Tiktok account of the Central Committee of the Communist Youth League as an example to conduct research. The conclusion was that the type of short videos of government affairs was closely related to mass participation. Short videos of current events and hot spots could cause people to like, comment and forward. The praise and comment enthusiasm of the masses could be clearly seen in military style publicity videos. In music and emotional videos, melancholy music could promote mass comments. In terms of the title of the video, what can get more comments and forwarding from the masses is the statement [15]. With the help of the "interactive ritual chain" theory, James G M studies the interactive communication between the government Tiktok number and users. The government Tiktok number should build a perfect communication mode, and further communicate with the masses through common concerns and catering to the feelings of the masses in the process of releasing and publicizing information [16]. Okulicz kozaryn A and others believe that the interactive communication method for the future development of government Tiktok is to rely on the non popular positioning, give reasonable play to the characteristics of various platforms, launch updated output and publicity models, better disseminate information, and strengthen communication with the masses [17]. DAAS P J H et al. Took the relevant contents of the government Tiktok number of 13 central level units as the research direction, and concluded that the dissemination of department information and the construction of national image are the main contents of the central department video number, in which patriotism is widely disseminated. At the same time, these government affairs Tiktok numbers are also good at grasping the main time points and important events with high popularity, and arousing the

resonance of the masses through videos. These measures have increased the attention of video numbers and brought new enlightenment to government affairs communication [18]. Through the case study of the innovative characteristics of "Shenzhen Energy", Dozier J studied the content and technological innovation of government Tiktok short video, built a government characteristic culture, made government services deeply rooted in the hearts of the people, and realized the sustainable development of government Tiktok short video [19]. In the context of the outbreak of the COVID-19, Scanlon D P and others studied the government Tiktok number in combination with the particularity of the epidemic environment. After analyzing the content and function of the government Tiktok number, they proposed that the government Tiktok number was not beneficial to the control of public opinion and guidance of events, and the relevant government work members should pay attention to and solve such problems [20]. Zhang y et al. analyzed from a new perspective, that is, the new communication characteristics emerging in the context of media integration. The "decentralization" and "deorganization" characteristics of new media have enhanced the activity of users and the transparency of the social public opinion environment. Under this background, the new media of government affairs is the social product of actively adapting to and following the laws of the Internet and actively innovating service methods [21]. Dunson, David B pointed out that in the context of media convergence, media operators should have Internet thinking, accept and accommodate new media with an open mind, and expounded the significance of building a new media matrix for government affairs. On this basis, he pointed out some problems that still exist in building a new media for government affairs [22].

In the dissemination process of government short videos, user feedback is crucial. However, existing research lacks a deep understanding of the emotional tendencies and meanings of user comments, likes, shares, and other behaviors, and fails to fully grasp the true attitudes and feelings of users towards government short videos. At present, research mainly focuses on the cultural background of China, and there is relatively little research on the dissemination effects of government short videos in other countries and regions. Therefore, there are obvious shortcomings in cross-cultural comparison. In addition, there is a lack of sufficient research on the comparison of the dissemination effects of different short video platforms. Although some studies have proposed strategies to improve the effectiveness of government short video dissemination, these strategies often lack practical application value and fail to effectively translate into specific operational suggestions or solutions. Therefore, how to translate research results into practical applications is still an urgent problem to be solved.

In order to make up for these shortcomings, future research needs to further expand the depth and breadth of data processing, explore user feedback in depth, strengthen cross-cultural and cross platform comparative research, and improve the practical application value of improvement strategies. Through these efforts, we can comprehensively and accurately evaluate the dissemination effect of government short videos, and provide more valuable suggestions for practical

applications. In the face of the blowout of public opinion, the traditional government affairs communication mode, which used to use the media to speak out, was stretched out and unsustainable, falling into the communication dilemma of "talking to yourself" and the decline of the government's credibility, which led to the failure of the guidance of government public opinion and the "failure" of government affairs communication. This paper proposes an optimization design scheme for the evaluation and promotion research of the dissemination effect of government short video based on big data statistics. By using the methods of content analysis and data analysis, this paper explores the significant influencing factors that affect the dissemination of government short video content, and then obtains the dissemination strategies to improve the dissemination of government short video content through data conclusions. Optimize the short video of government affairs from the aspects of video content and editing techniques, so as to make the planning of short video of government affairs more reasonable.

III. METHODOLOGY

A. Classify and Quantify Through Content Analysis to Analyze the Dissemination of Government Short Videos

In the online world, users are fully exposed to a large amount of information. From the sending of information to the acceptance of information, they will be affected by a variety of factors [23]. In practical applications, the extraction and analysis of unstructured and multidimensional big data have a wide range of application scenarios. In market analysis, market trends and consumer demand can be predicted by analyzing consumer online behavior data. In urban planning, multidimensional big data analysis can be used to evaluate the development status of cities and provide scientific basis for policy formulation [24]. With the popularization of digital media, government agencies have also begun to use short video platforms to interact and disseminate information with the public. In order to better evaluate the dissemination effect of government short videos, big data statistics have become an important tool [25]. Relying solely on big data statistics is not enough. When evaluating the effectiveness of government short video dissemination, multiple dimensions need to be considered. For example, in addition to basic viewing data, the theme, style, and audience characteristics of video content can also be analyzed. By understanding the interests and needs of the audience, the content and quality of short videos can be further optimized [26].

While specific media content only appears once, users are not forced to pay attention to this information as experimental participants, and will not be hinted by psychology. On the contrary, their feedback data for information content only depends on the role and results of their personal psychological and social characteristics. This paper boldly believes that the Internet world is like a huge natural laboratory, with interference from various factors that will affect the communication process. However, because its subjects are netizens, the base number is very large. In such a large experiment, many subtle factors can be ignored, and the real user data is an embodiment of the effect of network information communication, and all netizens show their

attitude towards information. Taking real user data as the indicator of communication effect, although user data is only the embodiment of information acting on cognition and attitude, and has not yet penetrated into the user's behavior level, it cannot be denied that high viewing volume, high praise number, high comment number and high forwarding number

have achieved the communication purpose to a certain extent, and taking into account the practical operability of the research, the measurement of its explicit data is appropriate and reasonable. Fig. 1 shows the proposed content dissemination capability model.

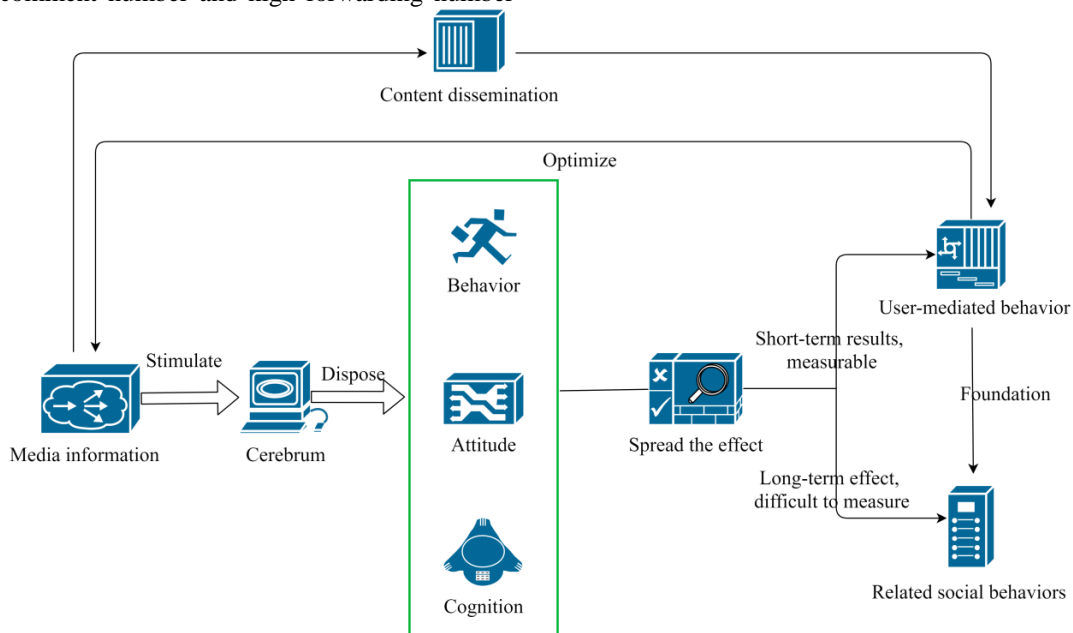


Fig. 1. Suggested Model of Content Communication Power

This paper refers to the classification of government short videos in some official accounts of government accounts, and classifies government short videos according to three levels: administrative level, industry system and content nature. It is divided into ministries and commissions, provincial, municipal and county levels according to different administrative levels;

According to the industry system, it is mainly divided into public security, fire protection, procuratorate, court, Communist Youth League, financial media, cultural tourism, etc; According to the nature of the content, it can be divided into science popularization, publicity, interaction, news and story as shown in Table I.

TABLE I. CLASSIFICATION AND INDUCTION OF SHORT VIDEOS ON GOVERNMENT AFFAIRS

Government short video classification	
Administrative level	Ministerial level
	Provincial level
	Municipal level
	County-level
Administrative system	Political and Legal Committee
	Public Security
	Procuratorial class
	Court class
	Judicial category
	Communist Youth League
	Financial media
	Health
	Cultural tourism
	Women's Federation
Content nature	Popular science
	Publicity
	Interactive class
	News
	Stories

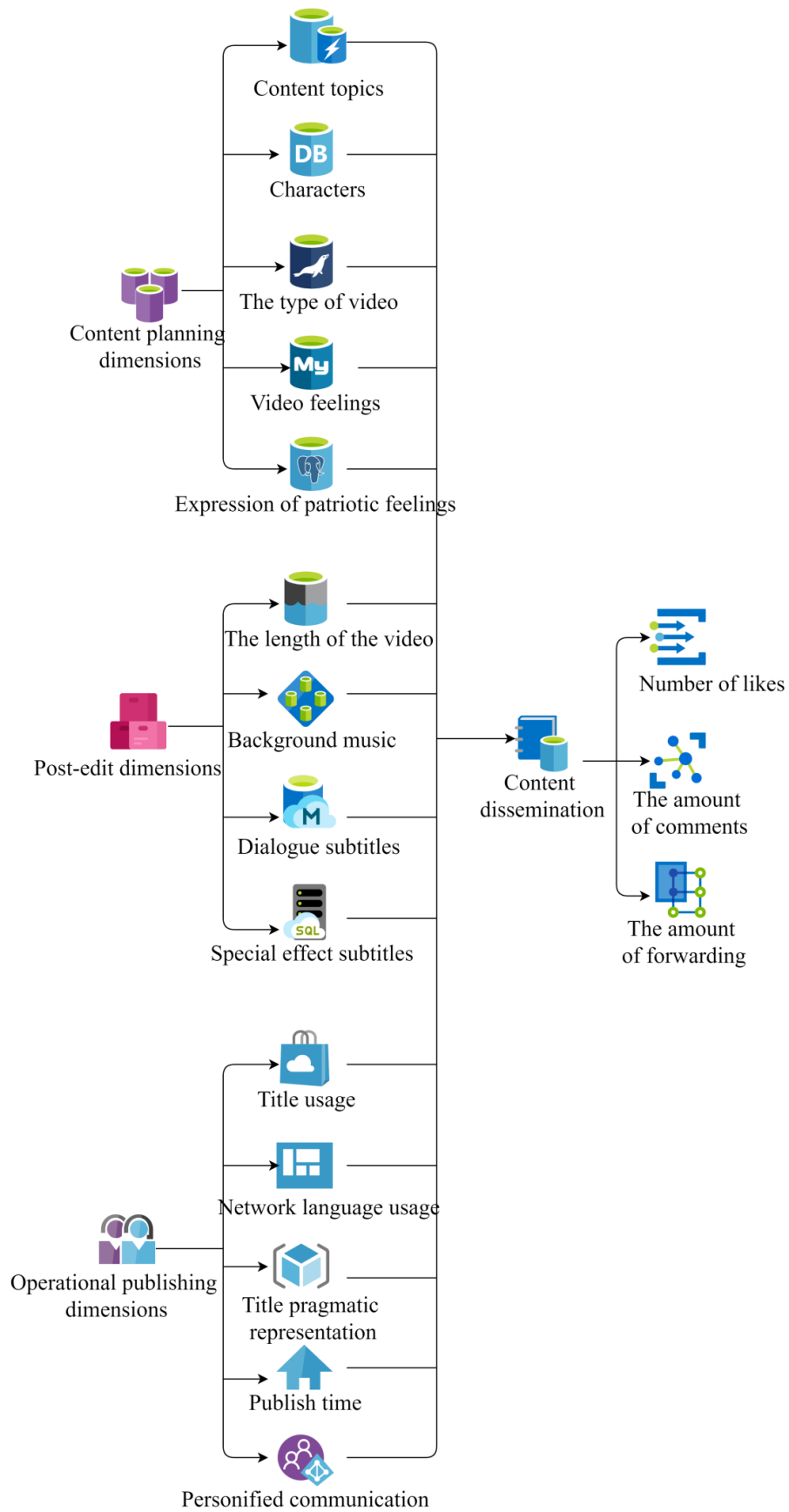


Fig. 2. Model of factors affecting the dissemination of government short video content.

As a new form of government information dissemination, government short video widens the space and channels of government short video information dissemination. In terms of functional positioning, compared with China's traditional government short video new media, its main function is positioned as "government online performance ability" and "online government at the fingertips". Its core function is information disclosure and dissemination, rather than government services.

Combined with the characteristics of short video of government affairs and the attributes of short video platform, this study extracts the content theme, personas, video type, video emotion, patriotic emotion expression, video duration, use of background music, subtitles with dialogue, subtitles with special effects, symbols used in titles, network terms used in titles, and pragmatic expressions of titles in the production of short video content of government affairs in content planning, post editing, and operation release, Video release time and personalized communication means are 14 influencing factors, and a model of influencing factors of the dissemination of short video content of government affairs is constructed. The model is shown in Fig. 2.

B. Optimize the Communication Effect of Government Short Video Based on Big Data Statistics

The rapid development of new media in the era of big data has made a great change in the traditional mode of information transmission, and gradually affected people's digital lifestyle and the habit of contacting the mass media. Since the major short video platforms have entered people's lives, short video software has become a very important part of the mobile video industry. The rapid development of the short video industry has gradually enriched people's lives. Compared with traditional words and pictures, short video, a new media form, is more vivid, intuitive and entertaining, which is consistent with the behavior of people sharing and participating in information dissemination on the network platform in the current era of big data.

Determination coefficient

R^2 is also called the determination coefficient of the equation, which indicates the interpretation degree of variables X to Y in the equation. The value of R^2 is between $[0,1]$, and the closer R^2 is to 1, the stronger the explanatory ability of X to Y in the equation. Usually, R^2 times 100% is used to express the percentage of change in the interpretation Y of the regression equation.

Taking the simplest univariate linear regression analysis as an example, this paper expounds the basic principle of the determination coefficient.

As above, the observation data are:

$$(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n), \tag{1}$$

The determination coefficient of the unary linear problem is desired.

$$y_i = a + bx_i + \varepsilon_i = \hat{y}_i + \varepsilon_i \tag{2}$$

where, \hat{y}_i is the calculated quantity, $i = 1, 2, \dots, n$. Based on the average value \bar{y} of the explained variable y_i , the above formula can be transformed into,

$$y_i - \hat{y}_i = (\hat{y}_i - \bar{y}) + \varepsilon_i = (\hat{y}_i - \bar{y}) + (y_i - \bar{y}_i) \tag{3}$$

Using the SRF sample regression function, there are,

$$\sum_{i=1}^n (y_i - \bar{y})^2 = \sum_{i=1}^n (\hat{y}_i - \bar{y})^2 + \sum_{i=1}^n (y_i - \bar{y}_i)^2 \tag{4}$$

Among them, $\sum_{i=1}^n (y_i - \bar{y})^2$ is called the sum of squares of total variables or total force differences, $\sum_{i=1}^n (\hat{y}_i - \bar{y})^2$ is called the sum of squares of regression, and $\sum_{i=1}^n (y_i - \hat{y}_i)^2$ is called the sum of squares of residuals.

Because the fitting effect of the sample regression line on the observed value depends on the distance between the sample observation value and the regression line, that is, the proportion of the sum of the squares of the regression in the sum of the squares of the total deviations. Therefore, the judgment coefficient can be obtained.

$$R^2 = \frac{\sum_{i=1}^n (\hat{y}_i - \bar{y})^2}{\sum_{i=1}^n (y_i - \bar{y})^2} = 1 - \frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{\sum_{i=1}^n (y_i - \bar{y})^2} \tag{5}$$

Pass t inspection

From the above, it is easy to prove that $Var(\varepsilon_i|X) = E(\varepsilon_i^2) = \sigma^2$ and \hat{a}, \hat{b} are the designs of a and b

$$Var(\hat{b}) = \frac{\sigma^2}{\sum_{i=1}^n (x_i - \bar{x})^2} \tag{6}$$

$$Var(\hat{a}) = \sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2} \tag{7}$$

And \hat{a}, \hat{b} obey normal distribution respectively

$$\hat{a} \sim N(a, \sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2}) \tag{8}$$

$$\hat{b} \sim N(b, \frac{\sigma^2}{\sum_{i=1}^n (x_i - \bar{x})^2}) \tag{9}$$

Normalize normal random variables \hat{a} and \hat{b} to obtain

$$z_1 = \frac{\hat{a} - a}{SE(\hat{a})} = \frac{\hat{a} - a}{\sqrt{\sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2}}} \tag{10}$$

$$z_2 = \frac{\hat{b} - b}{SE(\hat{b})} = \frac{\hat{b} - b}{\sqrt{\frac{\sigma^2}{\sum_{i=1}^n (x_i - \bar{x})^2}}} \tag{11}$$

SE represents the standard deviation of the variable. At this time, z_1 and z_2 obey the standard normal distribution.

However, the variance σ^2 of random disturbance term ε is unknown, and it can only be estimated unbiased with $\hat{\sigma}^2 = \sum_{i=1}^n \varepsilon_i^2 / (n - 2)$, available at this time.

$$SE(\hat{a}) = \sqrt{\sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2}} \quad (12)$$

$$SE(\hat{b}) = \sqrt{\sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2}} \quad (13)$$

In the case of small samples, it is easy to prove that $(\hat{a} - a)/SE(\hat{a})$ and $(\hat{b} - b)/SE(\hat{b})$ no longer obey the standard normal distribution, but obey the t distribution with a degree of freedom of $n - 2$, that is

$$t = \frac{\hat{a} - a}{SE(\hat{a})} = \frac{\hat{a} - a}{\sqrt{\sigma^2 \frac{\sum_{i=1}^n x_i^2}{n \sum_{i=1}^n (x_i - \bar{x})^2}}} \sim t(n - 2) \quad (14)$$

$$t = \frac{\hat{b} - b}{SE(\hat{b})} = \frac{\hat{b} - b}{\sqrt{\frac{\sigma^2}{\sum_{i=1}^n (x_i - \bar{x})^2}}} \sim t(n - 2) \quad (15)$$

IV. RESULT ANALYSIS AND DISCUSSION

Whether it is the former text era, the glorious newspaper era, and today's new media era with the emergence of science and technology, content is the prerequisite and primary concern of the media, but also its necessary standard. To succeed in short video, it is necessary to put the production of content in the first place. Only in this way can we get the audience's love.

As can be seen from Table II, the average value of the four options is >3 , indicating that the audience generally likes the short video of government affairs, which is a reason to attract attention from both the professionalism of the content and the style type.

For the "online celebrity" in the short video of government affairs, the video number must rely on high-quality content and different forms of communication to enhance its competitiveness. High quality content is the top priority among them. The audience gets the hot news they are interested in or the knowledge they need to learn from short videos. In this era of complex information, people's fast-paced life is prone to anxiety, which leads to being hoodwinked by some new media that convey wrong values. The short videos of the Central Committee of the Communist Youth League help the audience understand the whole story by interpreting the recent hot information. It is conducive to improving the social cognition of the audience, and these contents can really meet the needs of the audience and get the audience's love.

As a social platform, the most remarkable feature of short video platform is that it can quickly realize the function of one click forwarding in a short time, and interpersonal networking naturally plays a role in promoting the dissemination of content. It is an effective way to maintain interpersonal communication to transmit information that is fun and interesting in real life or useful to friends and can produce practical effects. Therefore, the government affairs short video should enlarge its own social communication elements to improve the audience's desire to share, so that the audience can analyze and discuss this phenomenon and improve its communication effect and influence. The importance of the audience's demand for social interaction can be seen from Table III. In recent years, domestic mobile social networking platforms have developed rapidly, and mainstream media and communication media have entered mobile social networking platforms.

TABLE II. CONTENT POPULARITY STATISTICS

	N	Minimum value	Maximum value	Mean value	Standard deviation
Rich and interesting content	375	3	5	3.72	0.745
Content of military image displayC	375	2	5	3.66	0.777
Content about the deeds of model figures	375	3	5	3.74	0.764
Content of transmitting positive energy	375	3	5	3.65	0.761
Deliver the content of excellent traditional culture	375	2	5	3.71	0.752
Valid N	375				

TABLE III. ANALYSIS OF SOCIAL INTERACTION FACTORS

	N	Minimum value	Maximum value	Mean value	Standard deviation
Interact with netizens in the comment area	375	1	5	3.86	0.756
More interested in the content of the popular list	375	2	5	3.75	0.743
More interested in sharing likes with friends	375	3	5	3.77	0.774
Share your views and meet social needs	375	2	5	3.82	0.759
Valid N	375				

Short videos create a platform for the audience to "speak freely" through star attraction and interesting videos. Government related institutions also see the significant advantages of short videos, which can trigger users' enthusiasm for reprinting, liking and commenting while spreading. It is very consistent with the platform attribute of current social media, and realizes the transmission of positive energy in the platform that seems to be threatening entertainment, You can not only get some useful information, but also experience relaxation and entertainment. This also shows that in the current era of integrated media, people's offline activities are gradually reduced, and online social relations have an important impact on people. In today's diversified and complex information, group sharing and interaction are not simply about content, but also meet people's desire to share in personalized

communication. Social platforms need to strengthen their social attributes, so that people can more easily deliver the content they are interested in, promote multi-level content dissemination, make good content benefit more people, expand influence, and achieve good communication results.

In order to have a targeted and effective understanding of the use of government short video, and provide an effective reference for the development status and future development strategies of government short video, the influencing factors were investigated. The specific distribution of six aspects: the usefulness of the information, the interest of the information provided, the comprehensibility of the information provided, the speed of information update, the beauty of the overall video style, and whether the government Tiktok has played its value is shown in Fig. 3.

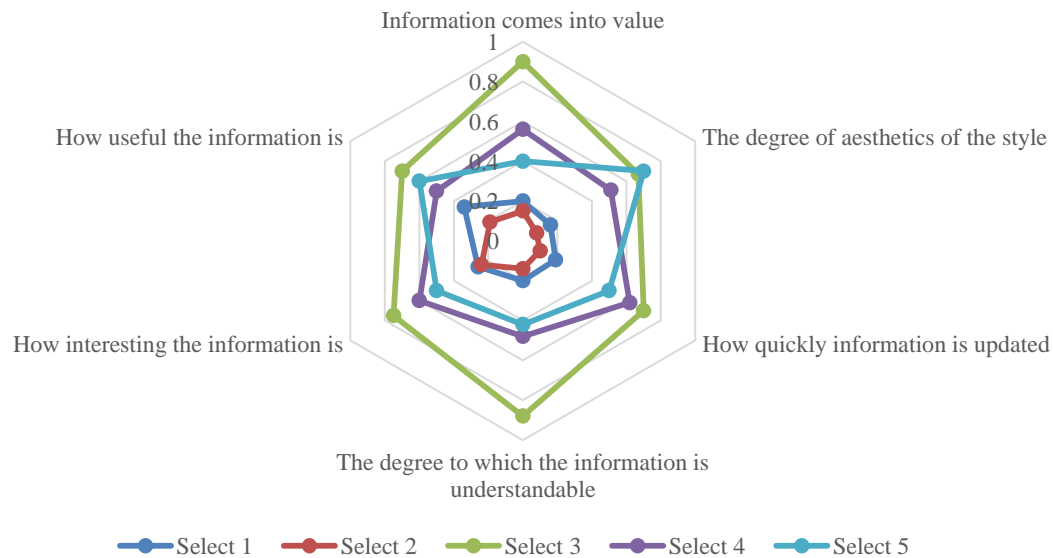


Fig. 3. Use value of government short video.

Based on all the data, it can be concluded that most of the respondents are passive in contacting the government Tiktok number, and they do not take the initiative to understand the situation of concern. Even many people do not know the existence of the government Tiktok number, or their cognition of the government Tiktok number is vague, and their demand and desire for the government Tiktok number is not very high, let alone the situation and desire of interactive participation. There are not many people who want to pay attention to the government Tiktok number, for the understanding of the government Tiktok number, we hope to encounter information or promote the page. If you need to pay attention, the areas of attention tend to be relevant to yourself.

Through the research samples obtained above, we conduct empirical research on the influencing factors of the content dissemination of government short videos, and summarize the main factors that significantly affect the content dissemination of government short videos: content theme, personas, video type, video emotion, a total of four influencing factors. This chapter will discuss and analyze the specific research data and

related theories, and then summarize the research on improving the dissemination of government short video content.

It is found that the number of likes, comments and forwarding of short government videos with content themes of remembering history is significantly higher than that of other content themes; the forwarding number of short government videos with working dynamic content topics is significantly lower than that of other content topics.

According to the results of stepwise linear regression in Fig. 4, the content theme of remembering history will significantly and positively affect the number of likes, comments and forwards; the content subject of working dynamic class will significantly negatively affect the number of forwarding. This significant difference can be explained by using and satisfaction theory. As active rational individuals, current short video users have the right to choose. Users can selectively watch, like, comment and forward short video messages according to their personal needs, and the feedback data of the short video message corresponds to the individual's satisfaction with their needs to a certain extent.

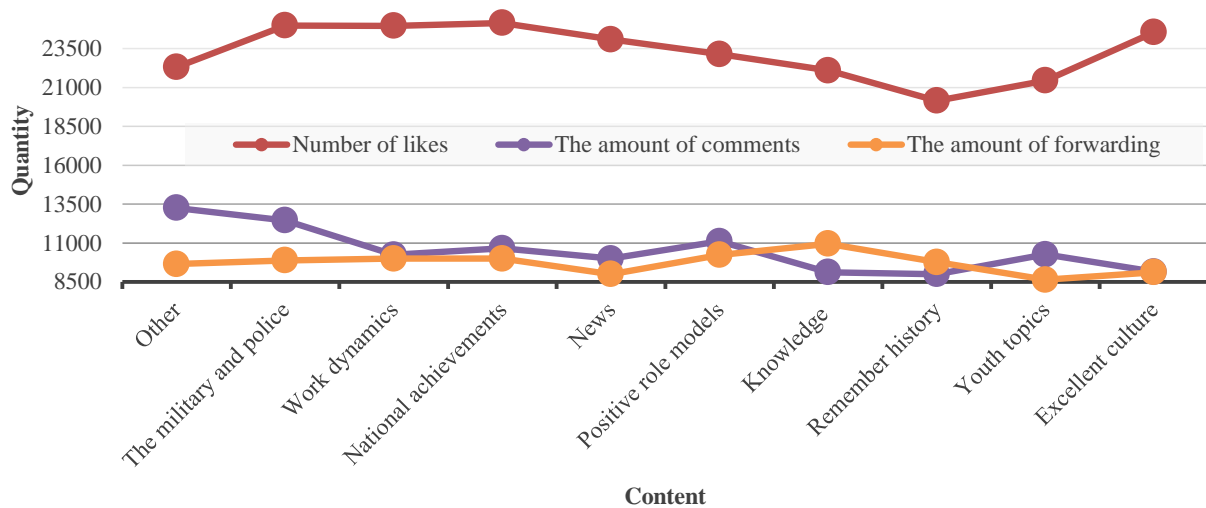
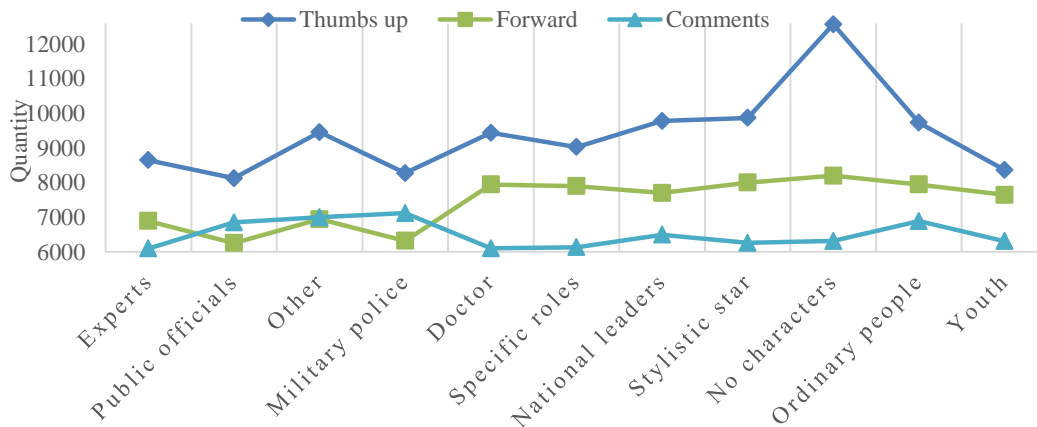


Fig. 4. Correspondence between content likes, comments and average forwarding data.



Figure

Fig. 5. Correspondence between characters and the average value of likes, comments and forwarding data.

According to the results of stepwise linear regression in Fig. 5 above, short videos of government affairs without people will significantly and positively affect the number of likes and forwards; if the persona is a "specific person", it will significantly negatively affect the number of forwards.

Government affairs short videos without people are generally macro scene descriptions of major events or text event notifications. The personas in the short video represent the narrative perspective, which is generally the perspective of the narrator's storytelling, which also contains the emotional tendency hidden by the narrator. The more such personas appear in the short video of government affairs, it also shapes and promotes the quality spirit of such personas, but the short video content with personas is more didactic, whether it is the third person perspective of telling persona stories, It is also the first person perspective of the personas' own "story telling",

and the short videos with specific personas have a stronger meaning of "value leading". When there is no persona in the short video of government affairs, the user watches it from a subjective perspective, so that the user can be immersive and empathic, and obtain the cognition of the information from the aspects of vision, hearing and even spiritual feeling.

According to the results of stepwise linear regression in Fig. 6, video emotion as "moving" emotion will significantly and positively affect the number of likes. The epidemic situation in the century and the changes in the century are intertwined, and severe challenges and major difficulties coexist. However, the indomitable people overcome the difficulties together, reflecting the national speed, demonstrating the national strength, and creating national miracles.

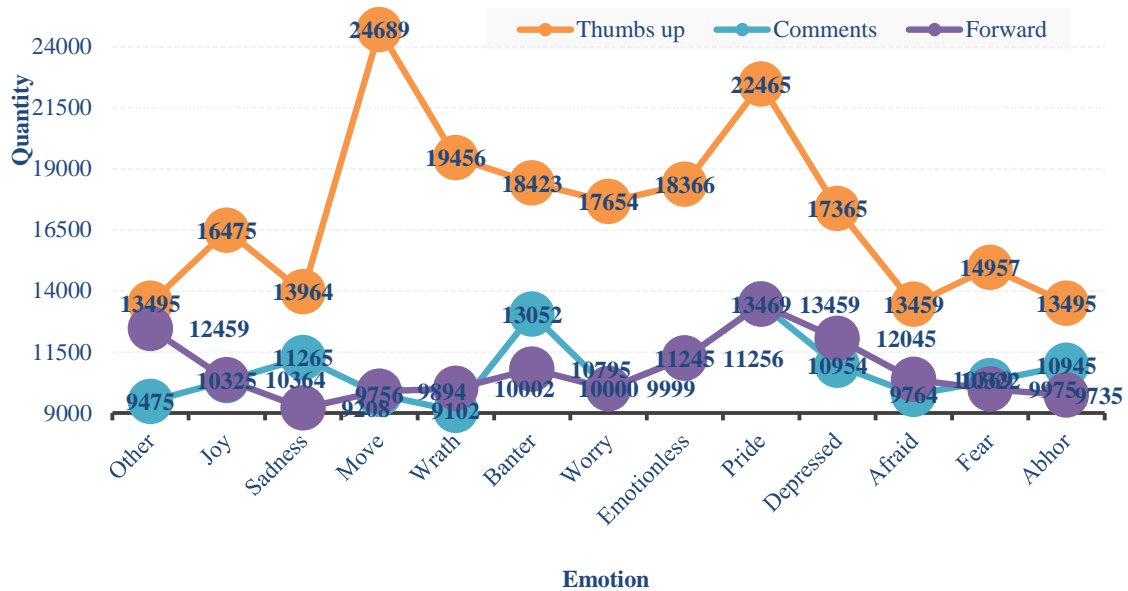


Fig. 6. Correspondence between video feelings and the average value of likes, comments and forwarded data.

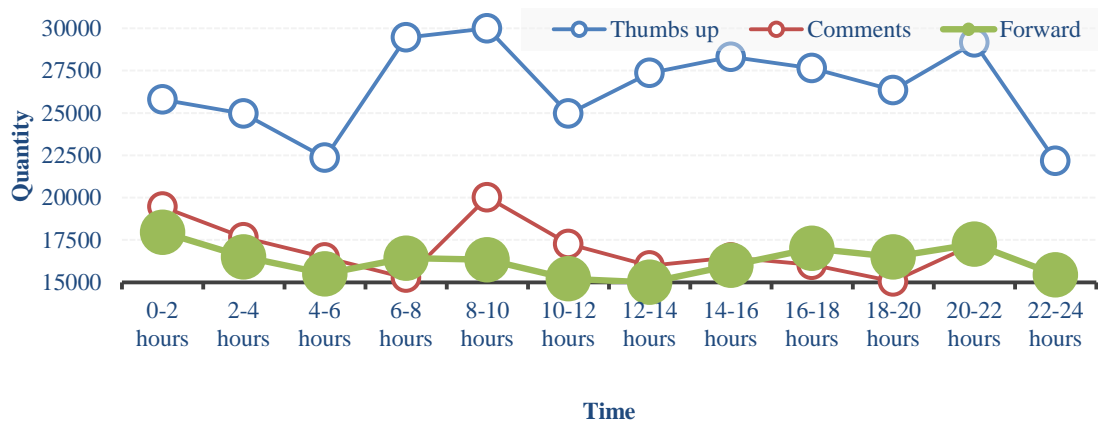


Fig. 7. Correspondence between publishing time and average value of likes, comments and forwarded data.

In Fig. 7, according to the results of stepwise linear regression, the release of short government videos at 8-10 will significantly and positively affect the number of likes and forwards. This is because the target users' active time is different, and the release time of a single short video content is significantly different from the data of content dissemination. Theoretically, the target user group has the same information receiving habits, and the active time of receiving information is also relatively consistent. The video content released during the peak period of user activity is relatively more likely to become popular. According to the report on the release time of Tiktok short visual frequency released by Kasi data, it is pointed out that the videos released by "Tiktok online celebrity" generally at 17-18 o'clock are easier to gain interaction, and the videos from 11-12 o'clock at noon are also good. The result of this paper is that the government short video released at 8-10 a.m. will get more likes and forwards, which means that the active time of the target user group of the government short video is 8-10 a.m.

V. CONCLUSIONS

This paper proposes an optimization design scheme for the evaluation and improvement of the dissemination effect of government short video based on big data statistics. The basic situation of government video is obtained through content analysis, and then the judgment coefficient and linear regression in big data statistics are used to extract common factors to improve the dissemination effect of government short video, so as to improve the dissemination influence of government short video. Finally, simulation test and analysis are carried out. Simulation results show that the proposed algorithm has certain accuracy, which is 8.24% higher than the traditional algorithm. This result fully shows that from the traditional media era to the current Internet new media era, user attention has become an important resource, and it is undeniable that high-quality content has always been a magic weapon to attract user attention. "Content is king" is not out of date, but puts forward higher requirements. How to carry content, express content, and disseminate content has also become the content itself. This study systematically takes the

dissimilated content as the foundation, the high-quality system as the guarantee, and the linkage communication as the advantage from the three aspects of content, content production and operation, in order to stand out from the redundant information containment in this information age with the rise of we media and social media, seize the attention of users, and improve the content communication power of government short videos. As the short video of government affairs is a new product of short video and a new content carrier of government affairs communication, its academic research and practical development are still in the initial stage. How to carry out effective government affairs communication of short video of government affairs is a new problem faced by both academia and industry. The data of this study mainly comes from various short video platforms, such as Tiktok, Kwai, etc. Although these platforms have a large user base in China, there may still be specific groups or regions using other platforms, which may affect the comprehensiveness of our data. In big data analysis, the quality and accuracy of data are key issues. Although we have employed various methods to ensure the accuracy and completeness of the data, there may still be some errors or omissions that may have an impact on the research results.

In the future, in addition to mainstream short video platforms, data from other platforms or social media can also be considered for more comprehensive analysis by adopting more advanced data cleaning and preprocessing techniques which will help to improve the accuracy and completeness of data.

COMPETING OF INTERESTS

The authors declare no competing of interests.

AUTHORSHIP CONTRIBUTION STATEMENT

Man Xu: Writing-Original draft preparation, Conceptualization, Supervision, Project administration.

DATA AVAILABILITY

On Request

DECLARATIONS

Not applicable

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