Research on the Dissemination Power and Influence Factors of Municipal Government Douyin Accounts

-- Taking Wenzhou as an Example

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Abstract

With the rapid development of short video platform, it has become an effective tool and channel for government information disclosure, improving public services and promoting the reputation of the government. This paper takes the Wenzhou government Douyin accounts as an example. Content analysis and regression analysis are used to analyze 679 popular short videos among the 12 government Douyin accounts with more than 100000 fans. It is found that the positioning of Douyin accounts has a key impact on the dissemination power. Different content topics have significant differences on the dissemination power of Douyin short videos. The content presentation methods and production skills of short videos also significantly affect the dissemination power of Douyin short videos. It is suggested to find out their own role positioning based on government division, balance the quality and quantity of short videos, and enrich the themes and forms of short video content, so as to improve the dissemination power of municipal government Douyin accounts.

Keywords

Municipal Government Douyin Accounts; Dissemination Power; Influencing Factors; Wenzhou.

1. Introduction

According to "The 48th Statistical Report on China's Internet Development"released by CNNIC, the number of short video users reached 888 million by 2021, accounting for 87.8% of the total Internet users.The rise of social media represented by short videos also marks that E-government has entered the 3.0 era from 1.0 era represented by government websites and 2.0 era represented by Micro-blog and Wechat. Relevant studies at home and abroad show that e-government can promote the openness and transparency of government departments [1], and promote citizen participation [2]. in 2018, the General Office of the State Council issued "The opinions on promoting the orderly and healthy development of new media for government affairs", pointing out that new media for government affairs is an important way to explore new models of social governance and improve social governance capacity [3]. 2018 has also become the "first year of short video publicity" for government affairs. Douyin platform is the largest short video platform in China. Therefore, taking the government Douyin accounts as the data source for the study of government short video publicity has strong representativeness and persuasiveness.

Due to the short rise time of short video media, there is a relative lack of relevant research at home and abroad. In China, Professor Ma Liang from the school of public administration of Renmin University of China and his team have conducted systematic researches on short videos at the macro level of the government publicity, and put forward that popular government short videos have some common features [4]. Some scholars also study the government Douyin

accounts from the perspective of Communication Science[5] and use big data to study the characteristics of government Douyin fans[6]. However, few studies focus on the micro level and provide reference for the operation of the government Douyin accounts.

Therefore, this paper takes municipal government Douyin accounts as the research object. The research focus on the dissemination power of short videos from government Douyin accounts and its influencing factors, which is not only conducive to expanding the current research on new media of government propaganda, but also helps to reveal the development status, communication characteristics and influencing factors of municipal government Douyin accounts. This paper also provide policy suggestions for the operation of government Douyin accounts and productions of government Douyin short videos.

2. Theories and Assumptions

Due to the special recommendation algorithm of Douyin platform, views are highly correlated with likes, comments and shares. According to the principal component analysis, the amount of short video likes can measure the dissemination power of Douyin short video accounts[7].On the selection of independent variables, this paper combines the characteristics of short videos on Douyin platform and the research based on previous studies, and selects 9 independent variables.

2.1. Sentence Pattern of Headlines

At present, the academic analysis of the pragmatic performance of government new media headlines mostly focuses on government Microblog or Wechat accounts. Through the textual research on headlines released by WeChat official accounts of university libraries, we found that the pattern of headlines often used questions, exclamations, declarative sentences and imperative sentences. Moreover, the articles with headlines using interrogative sentences and exclamatory sentences are much more effective than those using clauses and imperative sentences [8]. Headline is the first information that readers catch when opening the short video app. The pragmatic expression of the headline can also reflect the emotional characteristics of the short videos. Therefore, this study puts forward the following assumptions:

H1: Different sentence patterns of headlines have different effects on the dissemination power of short videos.

2.2. Subtitle Explanation

The duration of government short videos usually ranges from more than ten seconds to a few minutes. If government short videos are released without subtitles, it is difficult for the public to quickly grasp the main content of the videos. On the contrary, if government short videos have clear and organized subtitles, they can effectively attract the attention of viewers [9]. When watching government short videos, viewers can quickly understand the content of the short videos, clarify the theme, and then receive the content of the short videos, which affects the dissemination power of government short videos. Therefore, this study puts forward the following assumptions:

H2: Subtitle explanation has a positive correlation effect on the dissemination power of short videos.

2.3. Subject Category

By analyzing the theme of the Douyin short videos, we find that the theme of short videos affects the public participation and the short video dissemination power [10]. By analogy analysis, different subject categories of government short videos have different attraction to viewers.

H3: Different subject categories have different effects on the dissemination power of short videos.

2.4. Shooting Form

Through the analysis of popular government short videos, it is found that the proportion of live video shoots (live videos shoots refer to videos which recording live news) is the highest, because live video shoots have the highest authenticity and often have visual stimulation, which can attract the attention of the viewers and cause emotional resonance in a short time [3]. Therefore, this study puts forward the following assumptions:

H4: Different shooting forms have different effects on the dissemination power of short videos.

2.5. Emotional Color and Background Music

People tend to talk about their emotional experience with others, and the emotion of short videos will affect the willingness of the viewers to share and comment [11]. Therefore, the emotional color of government short videos plays an important role in information dissemination. Compared with the official accounts of micro-blog and WeChat, the contents of government short videos can arouse the viewers' strong emotional experience in a short time. The background music also plays a certain role in arousing the viewers' emotion. Therefore, this paper assumes:

H5: Different emotional colors forms have different effects on the dissemination power of short videos.

H6: Different background music has different effects on the dissemination power of short videos.

2.6. Language Style

The government Douyin account has a different language style from the traditional media, which is more vivid than the traditional Micro-blog and Wechat official accounts [12]. for example, the use of spoken and online language can shorten the distance with the public and eliminate the sense of distance brought by the official accounts. Therefore, this paper assumes:

H7: Different language styles have different effects on the dissemination power of short videos.

2.7. Domain Related

When the government short videos released by government official accounts is closely related to the public and their own work field, the short video accounts can more creatively design the government short video content from its own perspective, obtain unique video materials, and show the daily work to the public. Therefore, these government short videos are also more attractive to viewers. This paper assumes:

H8: The government short videos related to their own work field has a positive correlation effect on the dissemination power of government short videos.

2.8. Video Duration

Compared with traditional clips, people prefer to watch interesting or informative short videos. Therefore, the government Douyin accounts should also pay attention to the duration of short videos, and provide key information to meet the needs of the viewers. This requires continuous testing of the data effect of different duration videos. Therefore, this paper assumes:

H9: Video duration has different effects on the dissemination power of government short videos.

3. Analysis and Results

3.1. Overview of Government Douyin Accounts

We selected accounts with more than 100000 followers from Wenzhou government Douyin accounts as the research object. A total of 12 government Douyin accounts met the requirements, as shown in Table 1. The amount of fans of the 12 government Douyin accounts

is pyramid shaped, among which the amount of fans of Wenzhou Traffic Police is as high as 6.49 million, far ahead of other government Douyin accounts. Wenzhou Anti-Fraud Center, Wenzhou Ouhai Release and Wenzhou SWAT also have more than one million fans, and the remaining government Douyin fans have a huge gap with these four government Douyin accounts.

We define the likes per thousand fans to show the stickiness of fans. It is found that there is a huge difference between different government departments. Likes per thousand fans of Wenzhou Public Security is more than 61, which are the highest of the 12 government Douyin accounts. it shows that its fans have high stickiness and high recognition of short videos. On the contrary, Special Wencheng is the lowest. It shows that its fans has low stickiness and low recognition of short videos.

We use average likes per thousand fans to measure the average video quality of the government Douyin accounts. The difference is obvious. The highest is the Wenzhou SWAT whose average likes per thousand fans is more than 66 thousand.

Table 1. Overview of Wenzhou Government Douyin Accounts (Unit: thousand, Data of April 2022)

Official Douyin Accounts	Fans	Likes	Comments	Shares	Short videos	Likes/thousand fans	Average likes/thousand fans
Wenzhou Traffic Police	649.1	14818.8	571.4	185.4	3381	22.8	4.4
Wenzhou Anti-Fraud Center	191.8	4352.9	96.4	82.6	779	24.4	5.6
Wenzhou Ouhai Release	186.8	7044.2	198.6	176.5	3348	37.7	2.1
Wenzhou SWAT	156	1490	21.9	14.9	212	9.1	6.6
Pingyang Emergency Management Bureau	60.5	1064.8	63.3	96.6	687	17.6	1.5
Wenzhou Expressway Traffic Police	45.6	986.4	45.2	15.6	975	24.4	1
Longwan Emergency	36.9	359.6	8.9	8.6	425	9.9	0.8
Wenzhou Network Police	17.3	438.2	10.3	19.2	378	26.8	1.2
Longwan Public Security	15.3	175.7	3.2	0.7	454	11.5	0.4
Special Wencheng	15.3	103.7	2.4	4.1	225	6.8	0.5
Wenzhou Public Security	12.8	784.2	9.3	1.4	244	61.1	3.2
Wenzhou Law Popularization	11.9	176.5	7.8	11	820	14.8	0.2

3.2. Descriptive Analysis

We selected 679 popular videos with more than 10000 likes from 12 government Douyin accounts last year for content analysis and coding. According to the above assumptions, the relevant explanations and statistical results of the 9 variables are shown in Table 2.

It can be seen from Table 3 that the sentence patterns of popular short videos' headlines are mainly declarative sentences, accounting for 65.7%. Most short videos have subtitles, and the content is related to the work field of the government account. The video themes are mainly knowledge popularization and news anecdotes, accounting for 67% in total. The shooting forms are mainly live shooting and graphic splicing, each accounting for more than 40%. Most short videos have background music, mainly ordinary background music, accounting for 81.9%.48.7% of the short videos revealed excited emotion, while 36.7% had no obvious emotion.61.95% of the short videos do not reveal obvious language style. Due to the restriction of official identity, there is no government Douyin account releasing short videos in Internet Terms. 52% of short

videos are within 15 seconds, while 23% last more than one minute, and the remaining are between 16-60 seconds.

Table 2. Descriptive statistical results of variables

Variables	Variable interpretation	Average value	Standard deviation
Sentence Pattern of Headlines	Declarative sentence is 1, Interrogative sentence is 2, Exclamatory sentence is 3, Imperative sentence is 4	1.63	0.91
Subtitle Explanation	The video has subtitles is 1, otherwise it is 0	0.95	0.21
Subject Category	Theme publicity is 1, Positive energy propagation is 2, Knowledge popularization is 3, News anecdotes is 4	2.90	1.14
Shooting Form	Graphic splicing is 1, Sitcom is 2, live videos is 3	2.36	1.17
Emotional Color	Excited is 1, Be moved is 2, Humor is 3, No obvious emotional color is 4	2.28	1.38
Background Music	Popular songs of Douyin are 1, Ordinary background music is 2, No background music is 3	1.97	0.43
Language Style	Written language is 1, oral language is 2, Online language is 3, No obvious style is 4	3.21	1.02
Domain Related	Work field related is 1, otherwise it is 0	0.99	0.11
Video Duration	Less than 15 seconds is 1, 16-30 seconds is 2, 31-45 seconds is3, 46-60 seconds is 4, more than 60 is 5	2.45	1.70

Table 3. Descriptive statistical results of samples (N=480)

Variables	Types	Samples	Percentage	Variables	Types	Samples	Percentage
Sentence Pattern of Headlines	Declarative sentence	446	65.7%	Emotional Color	Excited	331	48.7%
	Interrogative sentence	46	6.8%		Moving	76	11.2%
	Exclamatory sentence	178	26.2%		Humor	23	3.4%
	Imperative sentence	9	1.3%		No emotional color	249	36.7%
Subtitle Explanation	With subtitles	648	95.4%	Shooting Form	Graphic splicing	272	40.1%
	No subtitles	31	4.6%		Sitcom	2	0.3%
Domain Related	Related	670	98.7%		live shooting	290	42.7%
	Irrelevant	9	1.3%		Surveillance video	115	16.9%
Subject Category	Theme publicity	128	18.9%	Background Music	Popular songs of Douyin	73	10.8%
	Positive energy propagation	96	14.1%		Ordinary background music	556	81.9%
	Knowledge popularization	172	25.3%		No background music	50	7.4%
	News	283	41.7%		1-15seconds	353	52.0%

Language Style	Written language	17	2.5%	Video Duration	16-30 seconds	56	8.2%
	Oral language	242	35.6%		31-45 seconds	39	5.7%
	Network language	0	0.0%		45-60 seconds	75	11.0%
	No obvious style	420	61.9%		More than 60 seconds	156	23.0%

3.3. Regression Analysis

This paper tests the collinearity of independent variables and the fitting degree of the model. The results show that the VIF<5 which means there is no multicollinearity relationship between independent variables, and all independent variables can fit the model.

Table 4. Results of independent variable regression analysis

Variables	Types	β	sig	Variables	Types	β	sig
Sentence Pattern of Headlines	Compare with declarative sentence			Emotional Color	Compare with excited		
	Interrogative sentence	0.332	0.740		Moving	3.015	0.003
	Exclamatory sentence	1.436	0.153		Humor	-0.070	0.944
	Imperative sentence	0.128	0.898		No emotional color	0.079	0.937
Subtitle Explanation	With subtitles or without subtitles	0.483	0.630	Shooting Form	Compare with graphic splicing		
					Sitcom	-0.234	0.815
Domain Related	Domain Related or irrelevant	0.497	0.620		Live shooting	0.110	0.912
					Surveillance video	1.735	0.034
Subject Category	Compare with theme publicity			Background Music	Compare with popular songs of Douyin		
	Positive energy propagation	2.671	0.008		Ordinary background music	0.581	0.562
	Knowledge popularization	0.370	0.712		No background music	-0.139	0.890
	News	0.506	0.613	Video Duration	Compare with 1-15seconds		
Language Style	Compare with written language				16-30seconds	1.522	0.130
	Oral language	0.303	0.762		31-45seconds	-0.477	0.634
	Network language	/	/		45-60seconds	-0.091	0.928
	No obvious style	0.730	0.467		More than 60 seconds	-0.129	0.897

Through the regression analysis, as shown in Table 4, we can find that as far as the sentence pattern of headlines is concerned, the influence of "Interrogative sentence" (p=0.74> 0.05), "Exclamatory sentence" (p=0.153>0.05), "Imperative sentence" (p=0.898>0.05) on likes is no significantly different from that of "Declarative sentence". In terms of subtitles, there is no significant difference between "With subtitles" (p=0.63>0.05) and "No subtitles". In terms of theme category, the influence of "Positive energy propagation" (p=0.008<0.05) on likes is significantly different from that of "Theme publicity". It shows that short videos of positive energy transmission are more likely to receive more likes and attract public recognition. In terms of shooting form, the influence of "Surveillance video" (p=0.034<0.05) on likes is significantly different from that of "Graphic splicing". As for background music, there is no significant difference between the influence of "Ordinary background music" (p=0.562>0.05) and "No background music" (p=0.89>0.05) on "Popular songs of Douyin". In terms of emotional color, the influence of "Moving" (p=0.003<0.05) on likes is significantly different from that of "Excited". It indicates that the emotion conveyed by the videos has resonated with the viewers. As far as discourse style is concerned, "Oral language" (p=0.762> 0.05) and "No obvious style" (p=0.467>0.05) have no significant difference on likes compared with "written language". In terms of whether the short video content is domain related, there is no significant difference

between "Related" (p=0.62>0.05) and "Irrelevant" on likes. In terms of video duration, there is no significant difference between the impact of videos with more than 15 seconds on likes and the impact of "1-15 seconds" on likes.

4. Conclusions and Recommendations

4.1. Research Conclusion

We use content analysis and regression analysis to explore the effect of 9 influencing factors on the dissemination power of government short videos. The following conclusions are drawn:

4.1.1. The Dissemination Power Shows Obvious Personalized Differences Due to the Influence of the Work Field of the Account Subject

If the government department itself has fascinating materials like Wenzhou Traffic Police, it is easier to attract viewers' attention. Half of the 12 Wenzhou government Douyin accounts studied in this paper belong to public security and traffic police departments, of which the number of fans of Wenzhou traffic police is as high as 6.49 million, far ahead of other government Douyin accounts.

4.1.2. Although the Number of Fans Plays a Decisive Role in the Dissemination Power of Short Videos, The Average Quality of Videos Also has a Great Impact

Due to the complex recommendation algorithm of Douyin platform, the account performance of the government short videos has a strong "Matthew effect", which means the more popular of the government short videos, the greater the amount of recommendation, and further expand its influence. Therefore, the quality of government short videos will determine its final data. This paper collected and analyzed more than 200 samples released by Wenzhou Traffic Police and Wenzhou Ouhai Release. Wenzhou traffic police has the largest number of fans and the maximum total likes. No short videos released by Wenzhou Ouhai Release has a lot of likes. However, due to its stable quality, the number of like of each short video is also very stable and total like is pretty good.

4.1.3. Short Videos Which are Easy to Drive Viewers' Emotion have Stronger Communication Ability

From the perspective of topic selection, the dissemination power of "positive energy communication" is stronger, and the dissemination power of moving video from the emotional color of video is stronger. Because they can drive viewers' emotion, cause viewers' emotional resonance and have stronger dissemination power.

4.1.4. From the Perspective of Shooting Form, Surveillance Video has Stronger Dissemination Power

The surveillance video is also the unique short video resource of the government Douyin accounts, which is different from other accounts. Its stronger documentary nature gives the viewer a stronger visual impact. Therefore, these accounts have more dissemination power.

4.2. Policy Suggestion

4.2.1. Find Their Own Role Orientation based on the Work Field of Government Departments

The government departments should use unique and informative materials based on the work field to make short videos. for example, the short videos released by Wenzhou Traffic Police is mainly about the daily work of a traffic policewoman called Yi yan and set up a column called "Yi yan nan jin". The personal charm of Yi yan and the real daily work showed by these short videos arouse curiosity of the viewers.

4.2.2. Balance the Quality and Quantity of Short Videos

The successful operation of Wenzhou Traffic Police is not accidental. From the perspective of the quality of the short videos released, this account is operated by a dedicated team and invested a lot of resources such as fund, manpower. However, not all the departments have the same resources, so it is very important to stabilize the quality of each short video. For example, the short videos released by Wenzhou Ouhai Release are extremely unique in form, all of which are news reports. However, the topics of each short video are closely related to current events and actively convey positive energy. the government accounts should make more high-quality videos and ensure the frequency of short video release.

4.2.3. Enrich Short Video Content, Themes and Forms of Expression

The government Douyin accounts not only spread the authoritative voice of government departments, but also need to meet the information and entertainment needs of the public. Therefore, the government Douyin accounts need to deeply study the information and entertainment needs of citizens and optimize the video themes and expression forms to make popular short videos.

Acknowledgments

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