Analysis on the characteristics and influencing factors of local government network response-- based on the example analysis of Xi'an leadership message board of People's Daily Online

Xiangxiu Yao

School of Finance, Xi 'an Eurasian University, Xi 'an 710065, China
yaoxiangxiu@eurasia.edu

Abstract: *Government response is not only a feedback of the government to the public demand, but also the key to promote the interaction between the government and the people. This study takes the message data of xi 'an city leaders' message board from January 2020 to March 2021 as the sample, analyzes the characteristics of government response of Xi 'an city leaders' message board on People's Daily online, and constructs logistic regression model to explore the influencing factors of government response. The results show that the main body of the message board is mayor, municipal party committee and district party committee. Comments in the field of employment were more likely to be responded to than other types of comments; The length of message content and the emotional intensity of message significantly affect the possibility of government response.*

Keywords: Local government message board, Government response, Logistic regression

1. Introduction

In recent years, with the rapid development of mobile Internet, all kinds of emerging media have increasingly penetrated into people's lives, making the public's political activities gradually shift to cyberspace, and enabling more people to have channels and opportunities to participate in social governance. The "Leadership Message board" of People's Daily is an online mass work platform specially set up by People's Daily for central ministries and commissions and main responsible comrades of local party committees and governments at all levels. Statistics show that in April 2022, People's Daily online's local leaders' message board received 65,000 messages from the public, and leading officials at all levels responded to 61,000. The People's Daily online message board for local leaders has become an important medium for the interaction between the government and the public.

The government response based on the mainstream new media platform is not only an embodiment of the government's sense of responsibility in the new era, but also the key to realize the effective development of network interaction between cadres and masses[1].With the development of online political inquiry in recent years, the public's online appeals have become more diversified and differentiated, and the efficiency of government response and the degree of interaction between government and people have been significantly improved. Based on the diverse demands of the public and their higher expectations for the government, how to further improve the effective response of the government and promote the online interaction between the government and the people has become an urgent issue to be considered at present.

This study will focus on what factors will affect the response of local governments to public demands on the current mainstream media interactive platform, and build a Logistic regression model based on the message data of xi 'an leaders' message board from January 2020 to March 2021 to analyze the characteristics and influencing factors of government response. In order to reveal the current political and civil online interaction logic, for the optimization of government response to provide reference.

2. Domestic and foreign literature review

Grover Starling first proposed the concept of government response, believing that government

response is the basic response of the government to the demands raised by the public in the process of political participation[2].Government response is not only a positive expression of the government to the public demand, but also the key to promote the interaction between the government and the people. In terms of the research on influencing factors of government response, scholars believe that government response is not only affected by its own factors, but also affected by many external factors, thus producing different response effects. Roberts and Kim Through the panel data research on economic reform and public opinion, it is believed that government response is closely related to whether the public actively interacts with each other[3]. Active participation of the public in political life will promote positive interaction and prompt and accurate response of the government. Zhong Zhijin 182 important network events in China from 2002 to 2012 are collected, and the characteristics and development trend of network events in the past decade are analyzed from the perspective of the whole process of the events[4].It shows that in most cases, local governments can respond positively, but the nature of events and stakeholders still have an impact on the enthusiasm of response[5].The paper studies the key factors that affect the response effect of major public opinion crisis of local government in China, and finds that the public opinion event itself, how public opinion spreads, and related variables of public opinion response all affect the government's intervention effect on public opinion. Meng Tianguang based on the big data analysis of the citizen and government behavior records of the online political platform, it is concluded that the spatio-temporal factors, the attribution of issues and the expression of demands are the main factors affecting the responsiveness of the government, which respectively reflect the evolution and interaction strategies of the three elements of political interaction in cyberspace -- institutions, governments and citizens[6]. LeiYuQiong based on the text analysis and sentiment analysis of 7,722 messages on the "leadership message board" during the COVID-19 outbreak, the results show that the public sentiment tendency is correlated with official reports and government responses[7].

Despite the fruitful results of existing research, some important limitations remain. First, the existing research on government responsiveness is still mostly theoretical, and a few studies adopt rigorous methods such as large sample quantitative analysis and experimental research. Second, few studies have looked at the characteristics of messages themselves.

3. Empirical Analysis

3.1 Research Design

The data samples selected in this study are the "leadership message board" of Xi 'an city of People's Daily Online from January 2020 to March 2021. The selection of this part of data is mainly based on two considerations: One is the study is aimed at the local government, according to the message board data situation, the municipal board because of its more proximity and relative public authority, compared to a higher level (provincial and ministry) and low (district) level in a message board, the number of messages and response rates is significant, more representative sample content and analysis.

This study uses Python software to crawl the message text of xi 'an city leadership message board of People's Daily Online from January 2020 to March 2021. First, descriptive analysis is conducted on the data to explore and analyze the characteristics of government response. Secondly, logistic regression model was established to explore the influencing factors of government response. Finally, this study summarizes the research results.

3.2 Data acquisition and description

3.2.1 Data Crawl

This study uses Python crawler to crawl the message data of xi 'an local leaders' message board of People's Daily Online from January 2020 to March 2021 (subject to public message time).There are a total of 16,071 messages from xi 'an 11 District 2 county government, 5998 messages from Wang Hao, Party Secretary of Xi 'an, and 6,000 messages from Mayor Li Mingyuan, totaling 28069.

3.2.2 Variable Description

Message data are included in districts and counties, message subject, the message domain, message type, message, the message content, deal with seven basic state variables, already dealt with messages in the data in addition to the basic variables include response unit, reply content, response time, solve the degree, deal with attitude, conduction speed, evaluation time seven reply related variables. In

combination with the business significance of variables, this study derived four new variables from the basic variables of message characteristics, including message subject, message topic length, message content length, message emotional intensity;Three new variables are derived from the basic variable of the response characteristics, including the number of units involved in the response, the length of the response content, and the response speed. The specific variable description is shown in Table 1.

Table 1: Variable description table

Variable classification	The variable name	Variable declaration
Message characteristics	County	Refers to the message body
	Message title	Refers to a topic that the public leaves a message on the message board
	Message field	Public comments on the areas involved, including: agriculture, rural areas, transportation, enterprises, medical care, urban construction, employment, government, education, entertainment, tourism, public security, environmental protection, finance
	Message type	Types of public comments: advice, advice, thanks, help, complaints
	Message time	The 2020-01 to 2021-03
	Message content	Specific message details
	Response to the state	Including handled, waiting for reply, handling
	Message board body	Mayor, Secretary of CPC Municipal Committee, Secretary of District Party Committee and secretary of County Party Committee
	Length of message topic	[2,26] unit: words
	Message Length	[1,1002] Unit: words
	Emotional intensity of message	Number of exclamation marks in message content, [0,21]
Response characteristics	Reply to the unit	Government agencies involved in resolving message problems, e.g. district Housing Authority, District Emergency Management Authority, District Water Authority, Resource Planning Branch
	Reply content	Government units reply details, such as: "Netizen friends: hello! After investigation by Lianhu District Market Supervision Administration, we reply as follows:..."
	Recovery time	The 2020-01 to 2021-03
	To solve the degree	One, two, three, four, five
	To deal with attitude	One, two, three, four, five
	Conduction velocity	One, two, three, four, five
	Evaluation of time	The 2020-01 to 2021-03
	The response involves the number of units	[0,4] unit: unit
	Length of reply	[3,2525] Unit: words
	Regeneration	[0,320], unit: day

4. Empirical Analysis

4.1 Analysis of characteristics of government response

4.1.1 Respond to the overall situation

The response status of the government in the message data includes three states: handled, to be replied to, and in the process of handling. In the process of handling, it means that the problems reflected by the public are transferred to the relevant departments for processing and waiting for the reply result. Therefore, in the research process of this study, such replies and handled are combined into responded. In terms of responses as a whole, 26,402 of 28,069 messages have been answered, accounting for 94%. Among them, 90% of the mayor's messages have been answered;94% of the messages left by the party secretary have been answered; 95% of the messages left by the district Party secretary have been answered; 98% of the messages left by the county party secretary have been answered.

4.1.2 Respond to text features

According to statistics, the average length of messages that have been answered is 241 characters, and 75% of messages contain 264 characters or less., consulting the message response to the content of the text the average length of 165 characters, "class response message content text average length of 226 characters, thank class response message content text average length of 94 characters, complaints class message response text average length of 213 characters, help class message response text average length of 203 characters.

4.1.3 Response time

Based on the cumulative percentage of response days, 25% of messages are answered within 4 days, 50% are answered within 7 days, and 75% are answered within 14 days. There are some phenomena of message processing time process, individual differences are large, the longest up to 320 days.

4.1.4 Response to evaluation

People's Daily online message board adopts the evaluation system of "three dimensional five heart". "Three dimensional" means that users evaluate the processing of messages from three aspects: the degree of solution, attitude and speed of handling. "Five hearts" represents a rating score from one to five for each dimension. According to the statistical results, the weighted average score of solving degree was 2.84, the weighted average score of handling attitude was 3.61, and the weighted average score of handling speed was 3.32.

4.2 Analysis of influencing factors of government response

In order to explore the impact of the characteristics of public comments on the state of government response (response and waiting for reply).In this study, a Logistic regression model was established with response status as the dependent variable and message subject, message field, message type, topic length, content length and message emotional intensity as independent variables. Modeling process dummy variable coding uses indicator comparison and sets the first classification as reference. The model results are shown in Table 2.

It can be seen from the model results that the message board subjects have a significant impact on the response state, and the message board subjects at different levels show significant differences. The main body of message board was mayor (Exp(B) = 0.259, P <0.05), Municipal Party Committee (Exp(B) = 0.453, P <0.05) and district Party Committee (Exp(B) = 0.535, P <0.05).From the distribution of message data, the public is more inclined to leave messages to the higher level of government, but the model results show that the higher level of government response probability is lower. Perhaps because the higher level of government has to deal with more messages, more types, and more complexity.

In terms of message field, the message in employment field (Exp(B) = 1.586, P <0.05) was more likely to be answered than other types of message. The environmental protection field (Exp(B) = 0.602, P <0.05), education field (Exp(B) = 0.569, P <0.05), and finance field (Exp(B) = 0.514, P <0.05) were significantly less likely to receive responses than other fields. In terms of message types, voice behavior messages (Exp(B) = 0.812, P <0.05) were significantly less likely to respond than other message types.

From the characteristics of message text, the length of message content (Exp(B) = 1.263, P <0.05) and the emotional intensity of message (Exp(B) = 1.121, P <0.05) significantly affected the possibility of government response. Among them, the longer the message length, the stronger the emotional intensity of the message, the higher the possibility of government response.

Table 2: Variables in the equation

Variable classification	Variable	B	S.E,	Wals	df	Sig.	Exp (B)
Message board body	The county party committee			172.141	3	000.	
	District party committee	- 626.	237.	6.987	1	008.	535.
	Municipal party committee	- 793.	241.	10.854	1	001.	453.
	The mayor	1.352	238.	32.273	1	000.	259.
Message field	Public security			67.637	12	000.	
	Urban construction	- 144.	140.	1.051	1	305.	866.
	Environmental protection	- 507.	168.	9.144	1	002.	602.
	The traffic	- 174.	162.	1.151	1	283.	841.
	Education	- 563.	157.	12.919	1	000.	569.
	Financial	- 666.	325.	4.185	1	041.	514.
	employment	461.	234.	3.882	1	049.	1.586
	Tourism	- 181.	341.	280.	1	597.	835.
	Enterprise	- 076.	180.	179.	1	672.	927.
	Agriculture, rural areas and farmers	326.	254.	1.651	1	199.	1.386
	Recreational	- 134.	371.	131.	1	717.	874.
	Medical	134.	272.	242.	1	622.	1.143
	Government affairs	251.	218.	1.325	1	250.	1.285
Message type	Consulting			8.968	4	062.	
	Thank you	- 389.	377.	1.068	1	301.	678.
	recommendations	- 208.	104.	4.030	1	045.	812.
	For help	078.	081.	912.	1	340.	1.081
	Complaints	- 023.	072.	104.	1	747.	977.
Message Text Features	Title length	- 006.	005.	1.308	1	253.	994.
	The length of the content	258.	000.	2.965	1	045.	1.263
	Emotional intensity of message	114.	116.	968.	1	025.	1.121
Constant		3.909	281.	193.126	1	000.	49.851

5. Conclusions and prospects

This study takes the message data of xi 'an city leaders' message board from January 2020 to March 2021 as the sample to analyze the characteristics of government response of Xi 'an city leaders' message board on People's Daily online, including the overall situation of response, text characteristics of response, response duration and response evaluation analysis. Logistic regression model is

constructed to explore the influencing factors of government response. The results show that the main body of the message board is mayor, municipal party committee and district party committee. Comments in the field of employment were more likely to be responded to than other types of comments; The length of message content and the emotional intensity of message significantly affect the possibility of government response.

Acknowledgements

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