# The effect of online political deliberation on the effectiveness of government response

Yuning Zhao and Xinxue Zhou

*Central University of Finance and Economics, Beijing, China, and*

Tianmei Wang

*School of Information, Central University of Finance and Economics, Beijing, China*

## Abstract

**Purpose** – Following Hovland's persuasion theory, this paper aims to develop a conceptual model and analyzes characteristics of online political deliberation behavior from three aspects (i.e. information, situation and manager). Based on the whole interactive process of online political deliberation, this paper aims to reveal the key points that affect the response effect of the government from the persuasive perspective of online political consultation.

**Design/methodology/approach** – Based on more than 40,000 netizens' posts and government responses from 2011 to the first half of 2019 of the Chinese political platform, this paper used the text analysis and machine learning methods to extract measurement variables of online political deliberation characteristics and the econometrics analysis method to conduct empirical research.

**Findings** – The results showed that the textual information, political environment and identity of the political objects affect the effectiveness of government response. Furthermore, for different position categories of political officials, the length of political texts, topic categories and emotional tendencies have different effects on the response effectiveness. Additionally, the effect of political time on the effectiveness of response differs.

**Originality/value** – The findings will help ascertain the characteristics of online political deliberation behavior that affect how effective government response is and provide a theoretical basis for why the public should express their political concerns.

**Keywords** Effectiveness of government response, Responsive government, Online political deliberation

**Paper type** Research paper

## 1. Introduction

Because of the rapid development of the internet, the social discourse system and the distribution of discourse power have greatly changed and so has the governance of governments. Online political deliberation refers to how the Chinese government uses the internet to ascertain the people's feelings and collates public wisdom to enhance the

democratic and scientific decision-making process. On one hand, the government actively seeks public opinion and responds positively to the questions raised by Internet users. On the other hand, the internet includes netizens' questions for, responses to and comments on the government. In essence, online political deliberation reflects a positive and dynamic two-way interaction between the government and internet users. The government's response is the public's political expectation, as well as a comprehensive reflection of the government's social, political, administrative and legal responsibilities. Evidently, the process of online political deliberation and government response are crucial to realizing the openness of government information and the participation of netizens in the decision-making process.

Although online political deliberation is becoming increasingly popular, numerous problems persist regarding government response. First, some government officials still hold on to the traditional standard of being officers (Claver *et al.*, 1999). Second, the government does not pay attention to performance when responding and provides mechanical responses (Ma, 2017). Few of the questions put forward by internet users have been implemented in a formal manner and officials are indifferent to the satisfaction of netizens (Sigwejo and Pather, 2016). Third, the government lacks the drive to respond actively and gives selective responses (Wu, 2014). There are many reasons for the aforementioned problems. China's online political deliberation is in its initial stage of development, and the government's awareness of public functions is somewhat weak, lacking the initiative and enthusiasm to respond to public opinion (Wang, 2002). Because of the economic gap between eastern and western China and between urban and rural areas, the distribution of network resources is not balanced. Moreover, the disorder and complexity of online political deliberation behavior pose challenges to effective responses from the government (Ma, 2017). Therefore, it is imperative to investigate the characteristics of online political deliberation and its effect on government response.

Scholars have studied the effectiveness of government response from different perspectives, such as the operation mechanism of government response, different states of public perception and elements of political network interaction. Existing studies have found that the expression of netizens' online politics, government response mechanisms, behavior strategies of government managers, online politics environment and netizens' satisfaction are all important factors that affect the effectiveness of government response (Ma, 2017; Meng and Li, 2015; Wang, 2019a, 2019b). However, most research perspectives explore one or more elements in the process of online political interaction; few studies focus on the characteristics of online political deliberation behavior. From a micro perspective, online political deliberation is a process of political expression, as well as a process of persuading the government to pay attention to and solve problems. By facing the bottom-up pressure of public opinion in cyberspace, the government has reestablished the vitality of the "mass line" and made online political consultation a system for absorbing public opinion and political consultation (Meng, 2019). The persuasiveness produced in the process of information transmission changes the attitude and view of government managers when they receive information, which subsequently affects the effectiveness of government response.

The present investigation attempts to address this gap by applying Hovland's persuasion theory to the analysis of the behavioral characteristics of netizens in online politics from three aspects, namely, information, situation and managers – and then build an influencing factor model of government response effectiveness. In this study, netizens' posts and government response texts from Beijing, Shanghai, Guangdong and Tianjin on an online political deliberation platform called Message Board for Leaders in People's Daily Online are selected as the research objects, revealing the key factors that affect the government's response to public inquiry. This research provides a new focus for the study

of government response effectiveness. To a certain extent, it also expands the application of Hovland's persuasion theory. Moreover, the study provides a theoretical basis for netizens' online political deliberation behavior, the design of a government response mechanism, and the construction of a political network environment.

## 2. Literature review

### 2.1 Research on the effectiveness of government response

Online political deliberation provides a two-way interactive mechanism for the government to understand the public interest and demands, reflect on them and participate in public affairs. On one hand, the government understands public opinion and can actively respond to public demands through the online political platform to build a harmonious and stable social and political order. On the other hand, the public can state their opinions and demands and participate in public affairs through the political network platform in a bid to enhance the trust and support of the public in the government and improve the relationship between both parties (Shao and Yang, 2020). Government response primarily refers to the process of positive response to the expectations and needs of the public in public management. The purpose is to meet the wishes of the general public and social organizations. Based on this definition, one of the major characteristics of government response is efficacy, that is, the provision of effective and targeted response to the public in a timely manner. Different scholars define the concept of government response effectiveness from different perspectives. From the viewpoint of government internal efficiency, scholars define government response effectiveness as government response performance. The government response performance is the result of the government's function in the process of political network interaction and the realization of its own will; it is the embodiment of work efficiency and management efficiency (Lu, 2008). From the perspective of social public interest, scholars define the effectiveness of government response as the ability of government response. It is the embodiment of the government's public management function to emphasize the government's ability to respond actively and effectively to public inquiries in the social cooperation governance network (Ma, 2017). From the viewpoint of the effect of interaction between the government and the people, the effectiveness of response emphasizes initiative, timeliness, accuracy and netizens' satisfaction with the government's response to their needs (Jiang *et al.*, 1999).

Previous studies have shown that the response characteristics and behavior of the government in cyberspace tend toward timeliness and distinction (Wu, 2014).The timeliness of responses refers to whether the local government can respond to or deal with the public demands or the reflected problems in time. The distinction response shows that the quality of government response is not even. Some responses are effective, whereas others are shallow and fail to solve the problem. The effectiveness of government response is a useful method to investigate the effect of online political deliberation. The government response-ability reflects the state of the interaction between the government and the people. The response rate of local governments to public messages is one of the most basic and intuitive indicators for judging the effectiveness of government response (Wang, 2019b). Nonetheless, the response rate is not a clear reflection of the quality of government response behavior, so scholars use it as an indicator to measure the effectiveness of government response within a time frame. From the perspective of the speed of response, there are differences in the duration from the occurrence of netizens' politics to the government's response. If the government lacks a sense of responsibility and the response to public questioning is slow, public problems and social contradictions cannot be solved in time (Ma, 2017; Wang, 2019b). Accordingly, some scholars have evaluated the effectiveness of government response by

further investigating the pertinence and effectiveness of government response content. Due to the lack of sufficient supervision, the quality of government response content cannot be guaranteed on the government platform. However, existing research on the measurement of the effectiveness of government response content is not sufficiently accurate. Wang (2019b) categorized the text content of the government's response on the government portal system as either an invalid response or an effective response. The results showed that the invalid response rate of local governments in different cities is rather different. Ma (2017) investigated the satisfaction of netizens as a tool to evaluate the quality of response content. Nevertheless, such studies still have some limitations in their focus on evaluating the effectiveness of government response content. From the choice and measurement of research variables, scholars often choose whether the government responds or the response speed to quantify the effectiveness of government response. Existing research on the effectiveness of government response content is not in-depth, and empirical research is scarce (Meng and Li, 2015; Zhang et al., 2013; Jiang, 2009; Yang, 2016). Moreover, there are few studies that explore the factors that affect the effectiveness of government response content. The effectiveness of the response content is an important indicator of whether the government can effectively solve a problem, as well as one of the standards for measuring the quality of the government response.

### 2.2 Research on the characteristics of online political deliberation behavior

Scholars have defined the concept of online political deliberation from various viewpoints. From the perspective of interaction process, some scholars think that online political deliberation is a process of interaction and dialog between the government and the public (Kang and Wang, 2013). From the viewpoint of communication channels, online political deliberation is a process of building an interactive platform for the government and netizens and realizing a two-way feedback relationship between the government and the people through the Internet (Li and Li, 2017). From the perspective of public participation, online politics is a process in which netizens voluntarily express their political will and participate in political affairs, thus affecting the formulation of national and government policies (Wu, 2013). Therefore, online political deliberation behavior is a process of information transmission, such as giving personal advice, responding to a public inquiry of the government and making suggestions on policies related to their own interests.

According to Chen et al. (2013), online political deliberation behavior is heterogeneous. This heterogeneity is reflected in the willingness to participate and the ability to ask questions. From the perspective of willingness to participate, attributes of social class and identity affect the quality and enthusiasm of netizens to participate in politics. Netizens of high social and economic levels tend to participate in politics online more frequently (Sha et al., 2019). From the perspective of political ability, Internet users' differences in age, occupation and other aspects also result in substantial differences in their access and ability to use information, thus affecting the depth of online political participation (Ma, 2017). It is difficult for netizens with low political ability to maintain their legitimate rights and interests through the network platform.

The expression of online political deliberation is personalized. During online political deliberation, political texts are transmitted from netizens to the government, and the differences between them constitute an important feature of political behavior. Scholars have studied the expression characteristics of netizens from the perspective of the length of political texts, the logic of expression, political topics categories and emotional tendencies (Meng and Li, 2015; Sha et al., 2019; Wang, 2019a). Meng and Li (2015) observe that the length of political texts and the emotional tendencies of netizens' politics vary considerably

depending on the political issue. According to Nielsen, an American market research company, approximately 62% of Chinese netizens are more willing to share negative comments than positive ones, and their online participation behavior has a certain negative preference, which increases the pressure on and difficulty of the government's effective response. In addition, the logic of expression affects the process of interaction between the government and the people. Netizens with a strong logical ability are more likely to express dissatisfaction with the government's response (Wang, 2019a).

The online political deliberation has regional differences. Mass media provide a new discourse space for the public online political deliberation, but this space is also deeply influenced by the mainstream political model in China. Specifically, according to the setting of administrative divisions in China, there are some differences in the effect of network administration among different administrative levels (Liu and Zhang, 2013). Because of the economic gap between eastern and the western China and between urban and rural areas, the distribution of network resources is not balanced, and the public opinion of netizens in online political deliberation cannot cross the "digital divide" and overcome the aforementioned differences.

Although several achievements have been made in the study of public political characteristics, some limitations still remain. From a research selection perspective, scholars primarily focus on the effect of government response on internet governance from three aspects as follows: the institutional defects of the current political system, the uneven quality of netizens and the complexity of netizens' participation behavior (Ma, 2017; Xu, 2017). However, there is less focus on the evaluation of the effect of government politics, which is based on the persuasiveness of netizens' online political deliberation. Netizens' online political deliberation is a process of expressing political to take to the government in the form of language and textual information (Wang, 2019a). This process involves information exchange and transmission, which can be specifically divided into four stages, namely, information transmission, collection, evaluation and decision-making (Zhang and Li, 2016). The information transmission process produces persuasion, which changes the views and attitudes of the government when receiving information and ultimately affects the government's response to netizens' politics. In the online political deliberation process, the persuasion process of transferring information from netizens to the government should not only consider the expression of information but also the environment in which the information is sent and the characteristics of the managers of information delivery. These factors will affect the effectiveness of the government response. Therefore, it is necessary to place the persuasion process at the core while studying the effectiveness of government response.

*3.2 Hypotheses*
*3.2.1 The influence of netizens' political information on government response.* This article examines political information from the following aspects. First, the length of a political text, in the form of inquiry pressure, has an effect on the performance of online inquiry response (Duan and Liu, 2019). To some extent, it can accelerate the government's response. Long texts are more likely to provide more useful information, making the government's response to netizens more targeted and effective. Based on these arguments, we propose the following hypotheses:

*H1a*. The length of a political text has a positive effect on the response speed of the government.

*H1b*. The length of a political text has a positive effect on the effectiveness of government response content.

Second, the logical expression of a text will affect the government's response. When a text is confusing, it may be more difficult to attract the attention of the government. Conversely, clearly expressed text is easier to respond to. Research shows that if detailed logical arguments are provided during the political inquiry process, managers will be more likely to glean the information they provide, which will make the government respond more quickly (Zhang and Li, 2016). As a logical text clearly reflects the intention of online political deliberation, it is easier to acquire an effective response from the government. Consequently, we suggest the following hypotheses:

*H2a*. The logic of a political text's expression has a positive effect on the response speed of the government.

*H2b*. The logic of a political text's expression has a positive effect on the effectiveness of government response.

Third, the category of the content will also affect the government's response. The nature and category of topics constitute the specific situation of online political deliberation. The government may pay close attention to some types of political questions and avoid discussing others, reflecting selectivity in its response. Ma (2017) performed an empirical analysis of the "interactive exchange" platform of the people's government websites of eight cities in Sichuan Province and found that the speed of government response varied with different types of netizens' political questions. Because the government's position may be different from multiple public interest subjects, there are differences in determining the order of response and its effectiveness, thereby resulting in differences in response speed and response effect. Therefore, we propose the following hypotheses:

*H3a*. The logical expression of a political text has an effect on the response speed of the government.

*H3b*. The logical expression of a political text has an effect on the effectiveness of government response content.

Finally, the government response will be affected by the emotion in political text. To pacify the negative emotions of netizens and avoid further antagonizing public opinion, the government tends to respond to negative politics at a faster speed and tends to give a more targeted response. Based on these arguments, we suggest the following hypotheses:

*H4a*. The emotional tendency of a political text has a negative effect on the response speed of the government.

*H4b*. The emotional tendency of a political text has a negative effect on the effectiveness of government response content.

*3.2.2 The influence of netizens' political situation on the government response.* According to the persuasion theory, because individuals tend to use situational cues to explain the information they receive, the situation of politics – in this case, the environment in which netizens carry out online political deliberation – will affect their attitude toward politics (Ferris, 1993; Zhang and Li, 2016). Using the internet platform of Suzhou Commission for Discipline Inspection, Yang (2016) concluded that the complex and changeable environment of online political deliberation led to a substantial difference in response speed. The present paper studies the influence of political situation from two aspects as follows: the time and the place of political inquiry. The former refers to the time netizens choose to express their

political thoughts to the government, which reflects the window of opportunity for political interaction. Correspondingly, the effectiveness and speed of government response vary at different times. Thus, we propose the following hypotheses:

*H5a.* The timing of political text has an effect on the response speed of the government.

*H5b.* The timing of political text has an effect on the effectiveness of government response content.

In relation to the latter, we examine the factor of provinces. The empirical results of Yin *et al.* (2016) show that the responsiveness levels of e-government in the eastern and western regions are significantly higher than that in the central region. Accordingly, the effectiveness and speed of government response in different regions vary. Regional characteristics are important indicators of government response performance. Consequently, we suggest the following hypotheses:

*H6a.* The province category has an effect on the response speed of the government.

*H6b.* The province category has an effect on the effectiveness of government response content.

*3.2.3 The influence of manager characteristics on government response.* The government administrator refers to the object of netizens' political inquiry. Managers' own characteristics will affect their attitude toward netizens' politics. According to the persuasion theory, the process of processing information by the object of information transmission affects the persuasiveness of the political inquiry (Hovland *et al.*, 1953). This study examines the characteristics of government managers from two aspects: the administrative level and position category. The differing administrative levels of local governments often represent considerable differences in the actual controllable resources. The higher the level is, the greater the amount and quality of administrative resources (Liu and Zhang, 2013). The research shows that the response performance of the government presents a decreasing gap pattern: with a gradual reduction of the level of government, the response performance decreases (Duan and Liu, 2019; Zhu and Zhou, 2011). The response effect of leaders of different administrative levels to netizens' message varies. Therefore, we propose the following hypotheses:

*H7a.* The administrative level of a political official has an effect on the response speed of the government.

*H7b.* The administrative level of a political official has an effect on the effectiveness of government response content.

Liao and Yuguo (2016) showed that the professional knowledge, work experience and other aspects of government officials have an important effect on the response effect of the government. Leaders of different positions, even at the same administrative level, have different work experiences and attitudes toward public politics, depending on the work they are in charge of. Based on these arguments, we suggest the following hypotheses:

*H8a.* The position category of political official has an effect on the response speed of the government.

*H8b.* The position category of political official has an effect on the effectiveness of government response content.

## 3. Research model and

*3.1 Research model*

Using the theory of information transmission, Hovland *et al.* (1953) posited the persuasion theory, which is based on the process of information exchange and regarded the process of information transmission as a system that can be divided into four stages, namely, information transmission, collection, evaluation and decision-making. In the information transmission process, different factors influence persuasion (Zhang and Li, 2016). The core idea is that persuasion produced in the information transmission process has changed the attitude and viewpoint of the information receiver. In their opinion, the main factors that affect how persuasive information is including the credibility of information provided by information publishers, the content structure of information, the environment of information transmission, the characteristics of trusted people, etc. (Hovland *et al.*, 1953). Online political deliberation makes the traditional mode of "mass line" open, and the new "mass line" influences policymaking from the bottom up (Jiang, 2009). This process produces information transmission with the purpose of suggestion and persuasion, which is in line with the model described by Hovland *et al.* (1953).

During the information transmission stage, netizens participate in the decision-making process of local governments and practice political inquiry as information is sent by netizens to local governments. During the information collection stage, the government collects the corresponding information to deal with netizens' politics. Two aspects are considerably important:

(1) informational elements related to the content itself, such as information content and expression, which may affect the persuasiveness of the information (Isenberg, 1986); and

(2) the situation of online political deliberation transmission, that is, the environment of online political deliberation transmission, which reflects whether a specific online political deliberation is appropriate in a specific environment (Morrison *et al.*, 2011).

The above information constitutes the perception and evaluation basis of the government for the persuasion of netizens and is an important factor that affects the government's response behavior.

During the information evaluation stage, the government will process the political information obtained in the information collection stage to form a pre-judgment. In the face of whether and how netizens should respond to questions concerning politics, managers will mobilize their own work-related knowledge, experience and skills to recognize and process the information received (Duan and Zhang, 2012) and then form an estimate of how to respond.

In the decision-making stage, the government responds to netizens' political inquiry after evaluating the collated information.

Based on the above analysis, the government response is the target of the public's online political inquiry. The government's ability to respond reflects the implementation of political questions. It should reflect the basic level of the government's response behavior, in other words, whether the local government responds to a higher authority, responds to the public's political inquiry and exercises its basic functions. In addition, the quality of the government's response behavior should be reflected, that is, whether the government's response is timely and the content is targeted, so that the public can respond to political questions quickly and efficiently, solve public problems effectively and resolve social contradictions. However, existing studies generally measure the response speed or the effectiveness of the response content separately (Jiang, 2009; Meng and Li, 2015; Yang, 2016; Zhang *et al.*, 2013). However, such measures cannot effectively evaluate the response to the

public's political questions. Therefore, the effectiveness of government response was selected as the dependent variable in this study, and an overall picture of the government's response behavior was described from the aspects of response speed and effectiveness of response content. This will reflect the government's response to public political inquiry and better reflect the degree of implementation of public political inquiry. Based on the persuasion framework of Hovland *et al.* (1953), we selected the information, situation (i.e. channel) and manager (i.e. residence) of the public network as independent variables. Additionally, we constructed a measurement model of the influence of the characteristics of online political deliberation behavior on the effectiveness of government response. In particular, this paper examines the effect of political information on the effectiveness of government response from four aspects: the logic of expressions, the length of political texts, political topic categories and emotional tendencies. From the two aspects of the time of politics and the province category, this paper studies the influence of political situation on the effectiveness of government response. Furthermore, by considering the administrative level and position category, this paper investigates the influence of government managers on response effectiveness. Figure 1 shows the research model of this paper.

## 4. Research method
### 4.1 Data sources
The Chinese government attaches considerable importance to collecting and absorbing public opinions through formal channels and has established a nationwide and regional network platform for political inquiry, as well as provided timely and effective responses to address various problems related to the vital interests of the people. The data source of this paper is an online political deliberation platform called Message Board for Leaders in People's Daily Online. The platform is not controlled by the local government, thus minimizing the selective presentation of local government opinions on internet users in the local online political deliberation platform (Li and Meng, 2019). At the same time, the platform has a wide range of attention and exposure. Over 40,000 netizens' online political
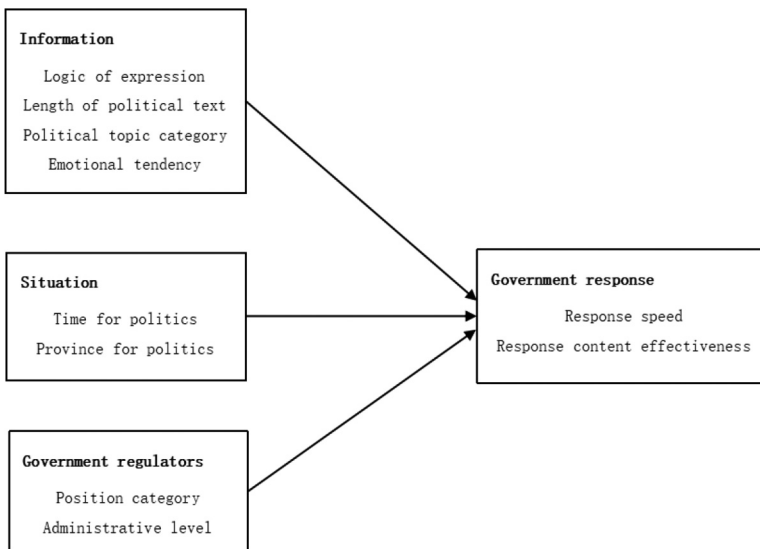


Figure 1.
Influencing factors
model of government
response
effectiveness

deliberation posts and government response data from Beijing, Shanghai, Guangdong and Tianjin were collated for the period from 2011 to the first half of 2019 to investigate the characteristics of netizens' online political deliberation and the effect of government response.

*4.2 Measurement of variables*
Because the netizens' political posts and government response information are all textual information, textual statistical analysis and machine learning methods were used to study the measurement of the main variables.

*4.3.1 Text representation.* In this paper, we considered the interrogative text and the government response text, marked the part of speech, and then measured them according to the specific task of natural language processing. For the relevant title, time, place and other information, the corresponding statistical analysis was carried out according to the needs.

*4.3.2 Subject classification.* When netizens post on the message board of local leaders, they can choose the category label of the topic; however, this label is generic, limited and cannot match the message content of netizens. In addition, netizens have a subjective awareness of the cognition of message labels, and the selection of labels and content expression sometimes do not have a good objective fit. Accordingly, this paper adopted the latent Dirichlet allocation (LDA) algorithm, an unsupervised probability model, to classify the text. The LDA algorithm is a three-layer Bayesian probability model based on the generation of document topics. It does not need manual marking and can complete topic classification efficiently, and the results are objective. The clustering result of LDA is not a strict topic definition, but the probability information of the existence of different topics, which is represented by a group of words. To determine the better clustering results, this study first calculated the perplexity of the LDA model under different subjects. The lower the perplexity of LDA model is, the better the description of the theme contained in the text. When the number of topics is greater than or equal to 13, the perplexity of the model tends to be stable, and the clustering results are appropriate. To avoid overly detailed topic classification, 13 was selected as the number of topic classification in this study. Subsequently, the document returned the clustering results under the LDA model classification and artificially summarized the subject categories according to the clustering results and text characteristics, as shown in Table 1. The document was divided into 13 themes: household registration policy, transportation and travel, urban construction, urban housing, business affairs, culture and entertainment, social security, rural agriculture, medical and healthcare, environmental protection, education, demolition and land acquisition and employment.

*4.3.3 Analysis of emotional tendency.* This study used the short text features of messages in the message board of local leaders to analyze the emotional features of netizens' politics on the basis of the three structure emotional model of "positive neutral negative". First, three taggers extracted the training set for manual tagging and then used the results of manual tagging to train naive Bayesian classifiers to analyze the emotional tendencies of all political texts on an individual basis.

*4.3.4 Presentation logic analysis.* This study used Python to call Baidu Artificial Intelligence's semantic expression model interface, which is based on deep neural network (DNN) training, for text logic analysis, and the result was the score of political text. The lower the score is, the better the logical expression of the corresponding text. The model relied on the massive high-quality data of the whole network and DNN technology to judge whether a sentence was consistent with the language expression habit so as to illustrate the logic of the sentence.

| No. | Theme-word | Topic |
|---|---|---|
| 0 | 0.033 * "House" + 0.033 * "Handle" + 0.031 * "Account" + 0.028 * "Child" + 0.020 * "Rent" | Household registration policy |
| 1 | 0.026 * "Subway" + 0.023 * "Station" + 0.021 * "Travel" + 0.020 * "Traffic" + 0.017 * "Bus" | Transportation |
| 2 | 0.019 * "Department" + 0.018 * "Illegal construction" + 0.016 * "Street" + 0.011 * "Urban management" + 0.011 * "Exist" | Urban construction |
| 3 | 0.037 * "Owner" + 0.025 * "Property" + 0.016 * "Problem" + 0.016 * "Community" + 0.015 * "Developer" | Urban housing |
| 4 | 0.069 * "Company" + 0.023 * "Enterprise" + 0.020 * "Leader" + 0.015 * "Deposit" + 0.012 * "Employee" | Business affair |
| 5 | 0.025 * "Ticket" + 0.021 * "Open" + 0.018 * "Rectification" + 0.018 * "Tourist" + 0.014 * "Management" | Culture and entertainment |
| 6 | 0.072 * "Resident" + 0.057 * "Disturbing resident" + 0.023 * "Noise" + 0.020 * "Solving" + 0.018 * "Problem" | Public order |
| 7 | 0.057 * "Villager" + 0.022 * "Leader" + 0.022 * "Land" + 0.017 * "Village" + 0.017 * "House" | Rural agriculture |
| 8 | 0.019 * "Phone" + 0.019 * "Find" + 0.015 * "Hospital" + 0.015 * "Medicine" + 0.008 * "Process" | Health care |
| 9 | 0.025 * "Haze" + 0.023 * "Garbage" + 0.016 * "House" + 0.012 * "Charging" + 0.011 * "Partition" | Environmental protection |
| 10 | 0.042 * "Children" + 0.031 * "Educational institution" + 0.030 * "Kindergarten" + 0.023 * "Primary school" + 0.013 * "Parent" | Education |
| 11 | 0.041 * "Demolition" + 0.028 * "Villager" + 0.025 * "Leader" + 0.022 * "Government" + 0.017 * "Village" | Land requisition for demolition |
| 12 | 0.014 * "Enterprise" + 0.014 * "Boss" + 0.011 * "Employment" + 0.009 * "Salary" + 0.008 * "Requirement" | Employment |

Table 1.
Subject
classifications of
political texts

*4.3.5 Analysis on the effectiveness of response content.* The effectiveness of government response content is an indicator to measure the extent to which the government's response content solves the public's political questions and to reflect its effectiveness. The effectiveness of government response content can be divided into three secondary indicators, namely, efficient response, inefficient response and invalid response. We segmented the text, removed the stop words and keywords, manually labeled a part of the text as the training set, trained with naive Bayesian classifier and analyzed and evaluated the effectiveness of all government responses.

## 5. Empirical test results
### 5.1 Descriptive analysis
This study used big data and statistical analysis to examine the status of government responses to netizens' online political deliberation and its influencing factors. Stata statistical analysis software was used to investigate the text length, expression logic, emotional inclination, topic category, the time of government administration, the administrative level of the provincial and administrative objects and the influence patterns of posts on the effect of the government response. The dependent variables of the two models were response speed and the effectiveness of response content. The response speed was measured in days, measuring the time difference between netizens' message and government response. The ordinary least squares (OLS) regression model was adopted in the corresponding model. The effectiveness of response content was expressed in three

levels of 1-3, namely, efficient response, inefficient response and invalid response. The corresponding model adopted OLS multiple regression.

Descriptive statistics are shown in Table 2. The average response speed of the government was 49.46 days, and the standard deviation was 153.38. The difference and standard deviation between the maximum value and the minimum value are large, which shows that the response speed of netizens was considerably different. The average value of the message object level was 1.21, which shows that netizens were more inclined to leave messages for senior level government managers; the average value of the message object position was 0.58, which shows that netizens had no obvious preference for messages from different position categories of government managers. The average length of political texts was 233.27, which shows that netizens use approximately a paragraph of text to describe their demands. However, some netizens also used thousands of words of substantially detailed messages on the message board for online political deliberation. Only 6,749 of the political messages showed positive emotions, accounting for 14.05% of the total. The average score of the expression logic was 147.60, which shows that the logic of netizens' expressions is essentially clear.

### 5.2 Correlation analysis

This paper used Stata to test the correlation. Tables 3 and 4 show the following. There was a correlation between the position category of political official and the response speed ($r = 0.076$; $p < 0.001$), between the speed of government response and the provinces ($r = -0.055$; $p < 0.001$) and between the month of politics and the response speed ($r = 0.016$; $p < 0.001$). The position category of political official was related to the effectiveness of government response content ($r = 0.035$; $p < 0.001$). There was a positive correlation between the administrative level of political official and the effectiveness of response content ($r = 0.119$; $p < 0.001$). There was a significant correlation between the province category and the effectiveness of government response ($r = -0.154$; $p < 0.001$). The effectiveness of government response was correlated with the political month ($r = -0.031$; $p < 0.001$). There was a negative correlation between the effectiveness of government response and emotional tendency ($r = -0.010$; $P < 0.001$) and a positive correlation between the effectiveness of government response and the length of political text ($r = 0.022$; $P < 0.001$). The effectiveness of government response was related to the logic expressions ($r = -0.037$; $P < 0.001$). The effectiveness of government response was correlated with the political month ($r = -0.031$; $p < 0.001$). These correlation analysis results are consistent with the research hypotheses.

| Variable | Observation | Mean value | SD | Minimum value | Maximum value |
|---|---|---|---|---|---|
| Response speed | 48,041 | 49.46 | 153.38 | 0.0042 | 2,815.32 |
| Response content effectiveness | 48,041 | 2.77 | 0.59 | 1 | 3 |
| Province category | 48,041 | 1.21 | 0.89 | 0 | 3 |
| Position category of political official | 48,041 | 0.58 | 0.49 | 0 | 1 |
| Administrative level of political official | 48,041 | 1.36 | 0.65 | 0 | 2 |
| Political topic category | 48,041 | 5.87 | 3.29 | 0 | 12 |
| Month of politics | 48,041 | 6.08 | 3.26 | 1 | 12 |
| Length of political text | 48,041 | 233.27 | 213.66 | 9 | 3,400 |
| Emotional tendency | 48,041 | 1.80 | 0.67 | 1 | 3 |
| Logic of expression | 48,041 | 147.60 | 92.24 | 60 | 1,311.10 |

Table 2.
Descriptive statistical table of the influencing factors of government response effectiveness

| | Response speed | Position category of political official | Administrative level of political official | Province category | Political topic category | Emotional tendency | Length of political text | Logic of expression | Month of politics |
|---|---|---|---|---|---|---|---|---|---|
| Response speed | 1.000 | | | | | | | | |
| Position category of political official | 0.076* | 1.000 | | | | | | | |
| Administrative level of political official | −0.129 | −0.243* | 1.000 | | | | | | |
| Province category | −0.055* | −0.053* | 0.276* | 1.000 | | | | | |
| Political topic category | 0.013 | −0.038* | 0.013 | 0.005 | 1.000 | | | | |
| Emotional tendency | −0.007 | −0.020* | 0.005 | 0.110* | 0.035* | 1.000 | | | |
| Length of political text | −0.011 | −0.025* | 0.085* | −0.051* | −0.040* | −0.171* | 1.000 | | |
| Logic of expression | −0.014 | −0.021* | 0.071* | −0.102* | −0.057* | −0.188* | 0.847* | 1.000 | |
| Month of politics | 0.016* | 0.032* | −0.068* | 0.021* | −0.013 | −0.005 | 0.015* | 0.020* | 1.000 |

**Note:** *$p < 0.001$

Table 3.
Correlation analysis
of factors that
influence
government response
effect and
government response
speed

| | Response content effectiveness | Position category of political official | Administrative level of political official | Province category | Political topic category | Emotional tendency | Length of political text | Logic of expression | Month of politics |
|---|---|---|---|---|---|---|---|---|---|
| Response content effectiveness | 1.000 | | | | | | | | |
| position category of political official | 0.035* | 1.000 | | | | | | | |
| Administrative level of political official | 0.119* | −0.243* | 1.000 | | | | | | |
| Province category | −0.154* | 0.005* | −0.276* | 1.000 | | | | | |
| Political topic category | 0.026 | −0.038* | 0.001 | 0.005 | 1.000 | | | | |
| Emotional tendency | −0.010* | −0.02* | 0.005 | 0.110* | 0.035* | 1.000 | | | |
| Length of political text | 0.022* | 0.025* | 0.085* | −0.051* | −0.040* | −0.171* | 1.000 | | |
| Logic of expression | −0.037* | −0.021* | 0.071* | −0.102* | −0.057* | −0.188* | −0.847* | 1.000 | |
| Month of politics | −0.031* | −0.032* | −0.068* | 0.021* | −0.013 | −0.005 | 0.015* | 0.020* | 1.000 |

Note: *$p < 0.001$

Table 4.
Correlation analysis of factors that influence government response effect and government response effectiveness

## 5.3 Hypothesis test

Table 5 shows the regression analysis results with response speed and response content effectiveness as dependent variables. First, taking the political information, situation and managers of the government as independent variables, this paper studies their influence on government response speed.

The length of political texts was positively related to the response speed of the government, supporting *H1a*. The logical expression of the political texts was positively related to the response speed, supporting *H2a*. Based on the household registration policy issues, there were significant differences in the response speed of the government on urban housing, urban construction, business affairs, rural agriculture, public order, environmental

|  | Response speed | Response content effectiveness |
|---|---|---|
| *Reference variable: Guangdong* | | |
| Beijing | −1.01(0.02)*** | 0.05(0.009)*** |
| Shanghai | 0.09(0.01)*** | 0.25(0.008)*** |
| Tianjin | 0.87(0.02)*** | 0.26(0.02)*** |
| Position category of political official | 0.13(0.01)*** | 0.02(0.006)*** |
| Administrative level of political official | 0.05(0.009)*** | 0.13(0.005)*** |
| *Reference variable: Household registration policy* | | |
| Transportation | 0.03(0.04) | 0.05(0.02)*** |
| Urban construction | 0.26(0.03)*** | 0.14(0.02)*** |
| Urban housing | 0.10(0.03)*** | 0.07(0.01)*** |
| Business affair | −0.09(0.03)*** | −0.09(0.02)*** |
| Culture and entertainment | 0.06(0.04) | 0.10(0.02)*** |
| Public order | 0.21(0.03)*** | 0.10(0.01)*** |
| Rural agriculture | 0.22(0.03)*** | 0.13(0.01)*** |
| Health care | 0.08(0.04)** | −0.04(0.02)** |
| Environmental protection | 0.31(0.04)*** | 0.14(0.02)*** |
| Education | −0.01(0.04) | 0.07(0.02)*** |
| Land requisition for demolition | 0.23(0.03)*** | 0.11(0.01)*** |
| Employment | −0.008(0.04) | 0.07(0.02)*** |
| *Reference variable: January* | | |
| February | −0.17(0.03)*** | −0.01(0.01) |
| March | −0.31(0.03)*** | −0.02(0.01)* |
| April | −0.23(0.03)*** | −0.02(0.01)* |
| May | −0.24(0.03)*** | −0.02(0.01) |
| June | −0.33(0.03)*** | −0.02(0.01) |
| July | −0.21(0.03)*** | −0.01(0.01) |
| August | −0.21(0.03)*** | 0.02(0.01)* |
| September | −0.26(0.03)*** | 0.02(0.01)* |
| October | −0.05(0.03) | −0.01(0.01) |
| November | −0.07(0.03)** | −0.01(0.01) |
| December | −0.09(0.03)*** | −0.02(0.01) |
| Length of political text | 0.12(0.01)*** | 0.02(0.006)*** |
| Emotional tendency | −0.001(0.008) | −0.009(0.004)*** |
| Logic of expression | −0.0005(0.0001)*** | −0.0002(0.00005)*** |
| Constant term | 2.53(0.06)*** | 2.67(0.03)*** |
| Observation value | 48,041 | 48,041 |
| *R*-square | 0.1724 | 0.0688 |
| *F* | 360.98 | 90.51 |

**Notes:** *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Table 5.
Interpretation model of government response effect

protection, healthcare and land requisition for demolition, supporting *H3a*. The emotional tendencies of politics had no significant effect on the response speed, which supports *H4a*. From a monthly perspective, the response speed in some months was significantly different than that of January, partially supporting *H5a*. Based on the Guangdong Province, there were significant differences in response speed among Beijing, Shanghai, and Tianjin, supporting *H6a*. The administrative level of political officials was positively related to the response speed. At the same time, the position category of political officials also significantly affected the response speed, supporting *H7a* and *H8a*.

The independent variable remained unchanged, and the dependent variable was set as the effectiveness of the government's response. The length of political text was positively related to the effectiveness of the government response content, supporting *H1b*. Based on the household registration policy issues, the effectiveness of the government response content of other issues showed significant differences. It can be seen that the topic category had an effect on the response content effectiveness of the government, supporting *H3b*. The emotional tendencies and the logic of expressions had significant influence on the effectiveness of the government response content, supporting *H4b* and *H2b*. From the perspective of the month of politics, based on January, the effectiveness of response content in some months was significantly different from that of January, partially supporting *H5b*. Based on Guangdong, Beijing, Shanghai and Tianjin had significant differences in response effectiveness, supporting H6b. From a government managers' perspective, the administrative level of political officials was positively related to the effectiveness of response content. In addition, the position of government managers also significantly affected the effectiveness of response content, supporting *H7b* and *H8b*.

### 5.4 Group-level regression analysis

To further explore the effect of public inquiry on the effectiveness of government response and to investigate what kind of expression strategy the public should adopt to acquire expected responses, we conducted a group-level regression analysis. First, the data were divided into the following four groups according to their province of origin: Beijing, Shanghai, Tianjin and Guangdong. Through a comparison of the data, we found that the response speed of the Beijing municipal government was significantly affected by the length of political texts ($r = 0.21$; $p < 0.01$), emotional tendency ($r = -0.06$; $p < 0.01$) and logic of expressions ($r = 0.0007$; $p < 0.01$). The effectiveness of response content was significantly affected by the length of political texts ($r = 0.06$; $p < 0.01$), emotional tendency ($r = -0.03$; $p < 0.01$) and logic of expression ($r = 0.0003$; $p < 0.01$). According to the regression results in Table 5, Beijing had a significant effect on response speed ($r = 0.68$; $p < 0.01$) and response content effectiveness ($r = 0.25$; $p < 0.01$). Therefore, this study focuses on public governance and government response data in Beijing and divides them into two groups: the mayor and the party committee secretary. Based on the seemingly unrelated regressions (SUR) model, the difference in coefficients among different groups was compared. This paper discusses whether different public political expression skills are applicable to different levels of leaders. On the basis of not considering the differences between provinces, the regression method for response speed and response content effectiveness was consistent with the basic regression model, and the regression results are shown in Table 6.

According to the results of the group regression analysis, the factors that influence leaders' response speed were different. For the mayor and the party committee secretary, different political topic categories had different effects on response speed. Among them, the themes of transportation, urban construction, urban housing, culture and entertainment, public order, environmental protection and land acquisition for promotion had significant

| | Response speed | | Response content effectiveness | |
|---|---|---|---|---|
| | The mayor | The party committee secretary | The mayor | The party committee secretary |
| Administrative level of political official | −0.72(0.04)*** | −0.69(0.03)*** | −0.23(0.02)*** | −0.25(0.02)*** |
| *Reference variable: Household registration policy* | | | | |
| Transportation | 0.14(0.10) | 0.27(0.07)*** | 0.22(0.05)*** | 0.29(0.04)*** |
| Urban construction | 0.45(0.10)*** | 0.55(0.07)*** | 0.27(0.05)*** | 0.47(0.04)*** |
| Urban housing | 0.31(0.09)*** | 0.26(0.06)*** | 0.14(0.04)*** | 0.30(0.03)*** |
| Business affair | −0.39(0.10)*** | −0.33(0.06)*** | −0.28(0.05)*** | −0.15(0.03)*** |
| Culture and entertainment | −0.08(0.13) | 0.04(0.09) | −0.05(0.06) | 0.13(0.05)** |
| Public order | 0.65(0.09)*** | 0.45(0.06)*** | 0.31(0.04)*** | 0.45(0.03)*** |
| Rural agriculture | 0.54(0.08)*** | 0.41(0.05)*** | 0.32(0.04)*** | −0.0002(0.04) |
| Health care | −0.11(0.10) | −0.05(0.07) | 0.02(0.05) | 0.44(0.04)*** |
| Environmental protection | 0.62(0.11)*** | 0.35(0.07)*** | 0.27(0.05)*** | 0.41(0.04)*** |
| Education | 0.06(0.12) | 0.15(0.07)* | 0.13(0.06)* | 0.36(0.03)*** |
| Land requisition for demolition | 0.34(0.09)*** | 0.29(0.06)*** | 0.29(0.04)*** | 0.36(0.03)*** |
| Employment | −0.14(0.14) | −0.28(0.09)*** | −0.23(0.07)*** | −0.20(0.05)*** |
| *Reference variable: January* | | | | |
| February | −0.46(0.09)*** | −0.29(0.06)*** | −0.006(0.04) | −0.04(0.04) |
| March | −0.37(0.08)*** | −0.57(0.05)*** | −0.03(0.04) | 0.002(0.03) |
| April | −0.43(0.08)*** | −0.51(0.05)*** | 0.04(0.04) | 0.002(0.03) |
| May | −0.36(0.08)*** | −0.52(0.05)*** | 0.02(0.04) | 0.02(0.03) |
| June | −0.56(0.09)*** | −0.71(0.06)*** | −0.06(0.04) | −0.10(0.03)*** |
| July | 0.12(0.10) | 0.12(0.10) | −0.04(0.05) | 0.03(0.06) |
| August | −0.12(0.10) | −0.08(0.10) | −0.009(0.05) | −0.0002(0.06) |
| September | 0.11(0.10) | 0.09(0.09) | −0.01(0.05) | 0.07(0.06) |
| October | 0.65(0.10)*** | −0.12(0.11) | 0.09(0.05)* | 0.08(0.06) |
| November | 0.60(0.09)*** | 0.09(0.08) | −0.08(0.05)* | 0.03(0.05) |
| December | 0.19(0.09)* | −0.07(0.06) | −0.03(0.04) | −0.09(0.04)** |
| Length of political text | 0.26(0.04)*** | 0.17(0.02)*** | 0.09(0.02)*** | 0.03(0.01)** |
| Emotional tendency | −0.08(0.03)*** | −0.04(0.02)* | −0.03(0.01)** | −0.04(0.01)*** |
| Logic of expression | −0.001(0.0003)*** | −0.0002(0.0002) | −0.0007(0.0002)*** | −0.00005(0.0001) |
| Constant term | 2.35(0.19)*** | 2.59(0.13)*** | 2.58(0.09)*** | 2.70(0.08)*** |
| Observation value | 5,053 | 7,369 | 5,053 | 7,369 |
| *R*-square | 0.20 | 0.22 | 0.13 | 0.17 |
| *F* | 47.35 | 76.87 | 28.86 | 54.11 |

**Notes:** *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Table 6.
Group regression analysis by the position category of political official

effects on the response speed of the two types of leaders. However, the test results, based on the SUR model, showed that the coefficient difference in culture and entertainment between the two groups was 3.73 at a 5% level of significance, the coefficient difference in healthcare between the two groups was 4.01 at a 5% level of significance, and no significant difference in the coefficient of other topics between the two groups. February, March, April, May and June all had significant effects on the response speed of the two types of leaders. However, the test results based on the seemingly unrelated model SUR showed that the coefficient difference between the two groups in March was 4.26 at a 5% level of significance, but there was no significant difference between the two groups in other months. For the mayor, the

length of the administrative text was positively related to the response speed. For the party committee secretary, the length of political documents was positively related to the speed of response. However, the test results showed that the coefficient difference of text length between the two groups was 3.48 at a 5% level of significance. For the mayor, the political text's logic was positively related to the response speed. For the party committee secretary, the logical expression of the political text had no significant effect on the response speed.

According to the results of the group regression analysis, the factors that influenced leaders' response effectiveness were different. Among the political topic categories, house registration policy, transportation, urban construction, urban housing, culture and entertainment, public order, healthcare, land acquisition for promotion and employment had significant effects on the effectiveness of the two types of leadership response content. However, the test results based on the similar uncorrelated SUR model showed that the coefficient difference between the two groups was 8.99 at a 1% level of significance. The difference in urban construction coefficient between the two groups was 6.23 at a 1% level of significance. The difference in culture and entertainment coefficient between the two groups was 6.07 at a 5% level of significance. The difference in public order coefficient between the two groups was 5.05 at a 5% level of significance. The difference in healthcare coefficient between the two groups was 5.62 at 1% level of significance. For the mayor, the length of the administrative text was positively related to the effectiveness of the response content. For the party committee secretary, the inquiry length was positively related to the effectiveness of the response. However, the test results showed that the coefficient difference of text length between the two groups was 4.64 at a 5% level of significance. For the mayor, the logic of the inquiry text was positively related to the effectiveness of the response content. For the party committee secretary, the logical expression of the inquiry text had no significant effect on the effectiveness of the response content.

## 6. Discussion

### 6.1 Analysis of the factors influencing the government's response to netizens' online political deliberation

*6.1.1 The effect of netizens' political information on government response.* The logical expression of political texts affected the speed and effectiveness of the government's response content. Namely, the clearer the political text is, the easier it is for the government to feel the urgent need for netizens to express their political questions, which makes the government respond faster and with high-quality content. The emotional tendency of political text had no significant effect on the speed of response, but it affected the effectiveness of response content. The length of political texts had a positive effect on the two dimensions of government response effect. This is consistent with the conclusions of Fang and Wang (2019). It can be seen that a long political text is more likely to contain more effective information, better reflect the netizens' political demands, boost the government's willingness to respond and meet the netizens' needs more efficiently. At the same time, some scholars believe that the length of netizens' political texts does not affect the effectiveness of government response content (Duan and Liu, 2019). The reason for contrary conclusions may be the differences in the research environment and empirical data. The category of government information had a significant effect on the response speed and the effectiveness of the response content. Different issues represent the interests and opinions of different social groups, while the different responses of the government to different issues reflect its willingness to respond to the interests of different social groups. This is consistent with the results of Li and Meng (2016). However, some scholars believe that the topic category of netizens' online political deliberation does not affect the government's response behavior

(Xu, 2017). These contradictory conclusions may be related to different empirical data. According to the group regression analysis of Beijing data, the influence of text length and topic category on the response effect of different position category of political official in different administrative levels was different. In other words, whether netizens need to consider how the influence of text length and topic category depends to a certain extent on the specific situation of their political objects. It can be seen from this that the information conveyed by the inquiry text affects the effectiveness of the government response to a certain extent. Netizens must master adequate political skills in the process of online political inquiry so as to achieve effective government response.

*6.1.2 The effect of netizens' political situation on government response.* From the point of view of political time, there was a certain discrepancy between the response speed and response content to political texts. For each month, there was a significant difference in the government's response speed but no difference in the effectiveness of the response content. This is consistent with the conclusions of Meng and Li (2015): China's political cycle provides netizens with more political opportunities. It has also prompted the government to respond more to netizens' political questions. However, from a response validity perspective, the government did not supply more effective responses in the peak period. From the perspective of political provinces, the governments of different provinces showed substantial differences in their response speed and in the degree of validity of their responses. Evidently, regional factors have a significant effect on the level of political interaction.

*6.1.3 The effect of government managers on government response.* There were considerable differences in the response speed and response content effectiveness among different position categories and administrative levels of political official. In particular, the higher the administrative level of a political official is, the lower the possibility of a response, but the response speed and effectiveness is high. This is consistent with the conclusions of Liu and Zhang (2013): the government's response and handling of netizens' politics need social and economic resources for support. These resources are closely related to the administrative level of the government, which represents the differences of various resources that the government officials can grasp in actuality. The higher the level is, the stronger the ability to control the administrative resources and related information and then indirectly affect the response effect of the government. However, from the group regression analysis, we can see that the government managers in Beijing, whether the mayor or the party committee secretary, showed a negative correlation between the hierarchy and effectiveness of politics. It can be seen that although there is a certain statistical law as mentioned above about the influence of the position categories of the political official on the effectiveness of the government response, the conclusions on influence of position categories of the political official on effectiveness of the government response may differ because of the different empirical data.

### 6.2 Theoretical and practical implications

This paper constructed a model to measure the effect of online political deliberation on the effectiveness of government response based on the theories of information transmission and persuasion. The paper studied the behavioral characteristics of online political deliberation from three aspects: politics information, political situation and government managers. The effectiveness of government response is examined from the following two levels: the speed of government response and the effectiveness of response content. In addition, we used network data to conduct empirical research. The theoretical implications of this study are as follows. First, this paper provided a new research perspective for online political

deliberation. This study expanded the application of Hovland's persuasion theory and revealed the key points that affect the response effect of the government using the persuasiveness perspective of online political deliberation behavior. Second, this study enriched the theoretical cognition of online political deliberation. During the literature review, the author found that most of the existing studies focused on some elements of online political deliberation behavior on effects of the government response, and few focused on the interactive process of online political deliberation. The exploration of the government response effect based on the whole interactive process of online political deliberation can fit the value orientation of E-government on the theoretical level and enrich the cognition of the effectiveness of government response to a certain extent.

Based on our conclusions, the following recommendations are made with respect to netizens' political inquiry and government response behavior. First, civic awareness should be cultivated and political education should be strengthened. At the same time, sufficient education concerning netizens' legal knowledge and appropriate guidance for netizens' words and deeds should not be neglected. We should strengthen the publicity of the network rule of law, cultivate a suitable network culture atmosphere, improve the civil consciousness of netizens' online political deliberation and encourage netizens to have a sense of responsibility and citizenship and to participate in political discussions on the Internet rationally (Sun and Zhang, 2012). The strengthening of netizens' consciousness will stimulate their will to participate in and discuss politics, and the convenient network principle of online political deliberation channels should be a breakthrough for the expression of public opinion. In this process, how netizens express their political thoughts is an important part of their political network strategy. Our empirical research shows that netizens are more likely to receive adequate government response by using long and detailed descriptions of their needs, as well as by using logical thinking to clearly express their political inquiries and, to a certain extent, their personal political sentiments. Further standardizing netizens' online political deliberation behavior helps promote netizens' political response and allow for satisfactory government responses.

Second, the government response performance evaluation system should be improved by paying attention to supervision and regulation. We should strengthen legal supervision; support, encourage, guide, standardize and protect the online political deliberation; make the online political deliberation construction an active and conscientious network expression space; and make it convenient for the country to use the network's democratic resources. In addition to promoting legislation, internet governance also needs to strengthen the legal supervision of the internet. The main body of network legal supervision, as well as the rights and responsibilities of the management departments should be further clarified. The following actions should be considered: build a high-quality network law enforcement team, strengthen the communication between the management departments, increase the investigation and punishment of network crimes and other cases and improve the network order.

At the same time, we should create a suitable network environment to promote the balanced development of online political deliberation. The difference in the effectiveness of government response in each province reflects the gap in the achievement of established local government response mechanisms. To gradually reduce the difference in the level of local government's governance and comprehensively improve the response-ability of online government, on one hand, it is necessary to establish a stable operation consolidation mechanism for the provinces at an advanced political level. On the other hand, for underdeveloped provinces, it is necessary to strengthen their government response capacity building and improve the quality of response to netizens' political questions.

*6.3 Limitations and future directions*
This paper studied the factors that influence the effectiveness of government response to online political deliberation behavior. Although the research model has been verified and the results have been achieved, there are still some deficiencies. First, the data used herein were restricted to the local leaders' message board, which does not reflect an overall picture of the political network environment, thereby having limiting the universality of the research conclusions. Second, the social, economic and educational levels of netizens lead to differences in their political participation ability; consequently, the identity of internet users may also act as a factor that affects the effectiveness of political inquiry. Future research can include netizens' personal identity as an additional variable. Finally, in addition to the government's responsiveness, public satisfaction is also an important factor in the investigation of the interaction between the government and the people, as well as a measure with which to test the effectiveness of the government's response from the public's perspective. Therefore, future research can incorporate public satisfaction in investigations of the effectiveness of government response.

**References**

Chen, G., Cai, W., Xu, H. and Wang, J. (2013), "Empirical analysis of human behavior patterns in bbs", *Communications in Computer and Information Science*, Vol. 396, pp. 131-142.

Claver, E., Llopis, J., Gascó, J.L., Molina, H. and Conca, F.J. (1999), "Public administration: from bureaucratic culture to citizen-oriented culture", *International Journal of Public Sector Management*, Vol. 12 No. 5, pp. 455-464.

Duan, Z. and Liu, J. (2019), "Government response logic of online politics: open commitment pressure and selective response – an experimental design based on 66 government websites leading mailbox", *Journal of Zhejiang University of Technology and Industry*, No. 4, pp. 79-89.

Duan, J. and Zhang, Q. (2012), "Cognitive influencing factors, theoretical basis and occurrence mechanism of suggestion behavior", *Advances in Psychological Science*, Vol. 20 No. 1, pp. 115-126.

Fang, J. and Wang, L. (2019), "Government response of network petition – based on the analysis of petition data of Guangzhou government website from 2014 to 2018", *Journal of South China University of Technology (Social Science Edition)*, Vol. 21 No. 5, pp. 79-90.

Ferris, J.G.R. (1993), "Social context of performance evaluation decisions", *Academy of Management Journal*, Vol. 36 No. 1, pp. 80-105.

Hovland, C.I., Janis, I.L. and Kelly, H.H. (1953), *Communication and Persuasion: Psychological Studies of Opinion Change*, Yale University Press, New Haven, CT.

Isenberg, D.J. (1986), "Group polarization: a critical review and Meta-analysis", *Journal of Personality and Social Psychology*, Vol. 50 No. 6, pp. 1141-1151.

Jiang, M. (2009), "Exploring online structures on Chinese government portals: citizen political participation and government legitimation", *Social Science Computer Review*, Vol. 27 No. 2, pp. 174-195.

Kang, H. and Wang, J. (2013), "On the improvement of the function of public governance by micro blog", *Social Sciences Series*, No. 3, pp. 70-72.

Li, C. and Li, H. (2017), "Citizen network politics and the construction of government response mechanism", *E-Government*, Vol. 1, pp. 77-84.

Li, F. and Meng, T. (2016), "Strategic political interaction: the use of netizens' political discourse and the mode of government response", *Journal of Wuhan University: Humanities Edition*, No. 69, p. 128.

Li, L. and Meng, T. (2019), "Research on the participation of the public in anti-corruption online – taking the big data analysis of the national online politics platform as an example", *China Administrative Management*, Vol. 403 No. 1, pp. 47-54.

Liao and Yuguo (2016), "Toward a pragmatic model of public responsiveness: implications for enhancing public administrators' responsiveness to citizen demands", *International Journal of Public Administration*, Vol. 41 No. 2, pp. 1-11.

Liu, Z. and Zhang, H. (2013), "Research on the response behavior of local government to internet public opinion", *Intelligence Magazine*, No. 10, pp. 17-21.

Lu, K. (2008), "Building responsive government: responsibility, performance and service", *Academic Research*, Vol. 2008 No. 5, pp. 55-60.

Ma, Z. (2017), "The research on the response ability of local government network", Doctoral dissertation.

Meng, T. (2019), "Revisiting the responsive government: the diversity and performance of the system of network politics", *Social Sciences in China*, No. 4, pp. 148-172.

Meng, T. and Li, F. (2015), "Political interaction in cyberspace: citizen's demands and government's responsiveness: big data analysis based on national network politics platform", *Journal of Tsinghua University: Philosophy and Social Sciences Edition*, Vol. 30 No. 3, pp. 15-29.

Morrison, E.W., Wheeler-Smith, S.L. and Kamdar, D. (2011), "Speaking up in groups: a cross-level study of group voice climate and voice", *Journal of Applied Psychology*, Vol. 96 No. 1, pp. 183-191.

Sha, Y., Wang, Z. and Zhan, J. (2019), "How does the interaction between the government and the people affect the effectiveness of internet governance?", *Journal of Public Management*, Vol. 16 No. 2, pp. 15-27.

Shao, Z. and Yang, L. (2020), "Pendulum response: an explanation for the lack of responsiveness – an empirical study based on the message board of local leaders in S city", *Comparison of Economic and Social Systems*, No. 1, pp. 114-122.

Sigwejo, A. and Pather, S. (2016), "A citizen-centric framework for assessing e-government effectiveness", *The Electronic Journal of Information Systems in Developing Countries*, Vol. 74 No. 1, pp. 1-27.

Sun, J. and Zhang, Y. (2012), "Network politics: Problems and rectifications", *Journal of the State Administration College*, No. 5, pp. 61-65.

Wang, J. (2002), "The relationship between political democratization and political stability at the transitional stage of China", *Socialist Studies*, Vol. 3 Nos 77/78, p. 14.

Wang, Y. (2019b), "The operation mechanism of the online governance platform of local governments in China", Doctoral dissertation.

Wang, Z. (2019a), "Research on the effectiveness of online political interaction based on public perception", Doctoral dissertation.

Wu, L. (2013), "Network democracy and political consultation: governance response in the internet era", *E-government*, Vol. 3, pp. 54-60.

Wu, T. (2014), "Behavior choice of public opinion response of local governments with public policy participation", *Guangxi Social Sciences*, Vol. 1, pp. 133-139.

Xu, L. (2017), "Research on government responsibility in public policy communication in the all media era. Media", Vol. 22, pp. 92-95.

Yang, G. (2016), "The environment of network politics and the speed of government response", *Theoretical Guide*, No. 9, pp. 38-44.

Yin, C., Ye, Z. and Yang, Y. (2016), "An empirical study of e-government responsiveness from the perspective of government innovation diffusion", *Journal of Shanghai Institute of Administration*, No. 4, pp. 35-45.

Zhang, L. and Li, X. (2016), "Why do managers agree? A study based on persuasion theory", *Foreign Economy and Management*, Vol. 38 No. 9, pp. 80-92.

Zhang, H., Tong, Z. and Liu, J. (2013), "'Selective response': policy participation under the network condition – a case study based on message board network politics", *Public Administration Review*, Vol. 6 No. 3, pp. 101-126.

Zhu, G. and Zhou, W. (2011), "Improve the credibility of the government in the process of changing its functions", *Journal of Renmin University of China*, Vol. 5 No. 3, pp. 120-128.

**Further reading**

Eunju and Chi (2012), "The Chinese government's responses to use of the internet", *Asian Perspective*, Vol. 36 No. 3.

Jiang, X., Ji, S. and Zhong, Q. (2011), "Citizen adoption of e-government services: an empirical study", *Scientific Research Management*, Vol. 32 No. 1, pp. 129-136,146.

**Corresponding author**
Yuning Zhao can be contacted at: zhaoyuningcufe@163.com