

Empirical Analysis of Political Participation, Government Response and Environmental Governance Satisfaction Based on CGSS2015 Data

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Abstract. Since the reform and opening up, China's economy has grown by leaps and bounds, and many significant achievements have been made in just over forty years. However, rapid economic growth has also brought about serious resource consumption and environmental pollution, especially represented by water and air pollution. At present, the overall strategy of sustainable development and ecological civilisation requires environmental governance to be a public task that must be addressed, and ecological governance is an integral part of the modernisation of governance systems and capabilities. The report of the 19th National Congress points out that "the strictest ecological and environmental protection system in history will be built, and more attention will be paid to guiding the public to play an effective role in environmental governance. Establish an environmental governance system in which the government is the leader, enterprises are the main body, and social organisations and the public participate." It is clear from this that environmental governance is a systematic project that needs to be shared between the government and the public. This paper investigates the relationship between government satisfaction with environmental governance, government responsiveness and citizens' political participation to explore the impact of government responsiveness and political participation on satisfaction with environmental governance, as well as the impact of government responsiveness on citizens' participation in environmental governance.

Keywords: government responsiveness; political participation; satisfaction with environmental governance.

1. Introduction

Since the reform and opening up, China's economy has developed rapidly, and many significant achievements have been made in a short span of more than 40 years. However, the rapid economic growth has also brought about serious resource consumption and environmental pollution, especially represented by water and air pollution. From a financial point of view, the environment should be classified as a public good, but because of its special characteristics, i.e., its high degree of sharing and vulnerability, the approach to environmental management is fundamentally different from that of other areas. In the report of the 19th National Congress, it is stated that "the strictest ecological environmental protection system in history will be built, and more attention will be paid to guiding the public to play an effective role in environmental governance. Establish an environmental governance system in which the government is the leader, enterprises are the main body, and social organizations and the public participate." It is clear from this that environmental governance is a systematic project that needs to be shared by the government and the public.

As far as the government is concerned, it mainly ensures the effect and level of pollution treatment by improving the relevant legal system, enhancing the law enforcement capability and promoting the improvement of the supervision level. Since the 19th Party Congress, based on the original legal framework, China has revised and established six new laws and regulations, including the Law on Prevention and Control of Environmental Noise Pollution, the Law on Environmental Impact Assessment, and the Regulations on the Implementation of the Environmental Protection Tax Law, while improving and developing the government's environmental governance capacity by establishing the river chief system and other ecological environmental protection systems. Today, a series of environmental pollution and governance indicators such as sewage discharge rate, air quality

index ecological and environmental damage compensation system have been incorporated into the government management assessment system and become key indicators for performance inspection.

In recent years, the construction of the ecological rule of law and the introduction of corresponding regulatory and prosecutorial measures have fully empowered citizens to be informed, supervise and participate in environmental governance, consolidating the legal and social basis for their political participation in the environment. On the one hand, these initiatives reflect the government's positive attitude toward the problems reflected by citizens, and on the other hand, they also reflect the role of citizens' political participation in environmental governance. Public satisfaction with environmental governance is a measure of public opinion on the measures taken by the government in environmental protection and the results achieved in a specific period of time. It reflects the public's demands and provides direction for the government to improve environmental protection measures, while improving public satisfaction with environmental governance helps reduce social conflicts, enhance the government's credibility, and strengthen public political support.

Therefore, how to build a benign cooperation mechanism between residents and the government, and explore the influence of citizens' political participation and government response to environmental governance events on environmental governance satisfaction has become the key to solving environmental governance problems. Previous academic research has included studies on the impact of government response on various types of government governance decisions and the impact of public participation on government decisions. For example, the impact of government response on network governance, the impact of government response on government credibility building, and the impact of public participation on environmental governance satisfaction. From these studies, we can basically see that government response often has a positive effect on government decision-making and public participation can effectively improve the government's ability to govern, but little research has been done on the effect of government response on citizens' political participation, especially in the new era of environmental governance, which is an important issue for the government. Most of the existing studies are at the level of theoretical analysis, so there is much room for exploring this issue. Based on this, this paper will investigate the moderating role of government response in the satisfaction of public political participation in environmental governance.

2. Literature Review and Research Hypothesis

2.1 Government response and satisfaction with environmental governance

Government responsiveness is "a government's acceptance of and response to public demands for policy change, and taking active steps to address problems". In terms of satisfaction with environmental governance, firstly, environmental governance is an important indicator of a government's level of governance. Secondly, a correct, timely and effective government response also ensures that citizens' needs for a better environment are met, which in turn promotes more active political participation in environmental governance. Effective government response also reflects the fundamental characteristics of our national government as a service-oriented government. The proposition of government responsiveness has been studied from a number of perspectives. For example, government response is a form of information feedback, which includes the response to people's demands and the measures taken to solve problems, and is a two-way communication process [1]. In contemporary society, the state achieves good results in social governance when the measures taken by the government are in line with the wishes of the people, responding to their demands and providing them with the social benefits they expect. In this sense, the ability of the government to respond effectively to the needs and aspirations of the people is a central issue [2] in the quality of governance. Although the government's responsiveness has improved significantly in recent years, it goes without saying that local governments are engaged in environmental governance with multiple objective functions [3], which in turn has led to inconsistent goals, perfunctory work and a single approach to government response, and the government's credibility has been greatly challenged [4] as a result. Government responsiveness and citizen political participation should be complementary

and should not be seen [5] in isolation from each other. More responsive government often means more active political participation [6] by citizens. It follows that effective government response and orderly political participation can contribute significantly to satisfaction with environmental governance, and that active public political participation can also have a positive impact on government response.

H1: Government response has a significant positive effect on government satisfaction with environmental governance.

2.2 Political participation and satisfaction with environmental governance

However, there are still some problems in practice in terms of how to monitor the government's responsible response to environmental governance. In the current situation in our country, it is still predominantly the higher level of government units that supervise the lower level of government units, and the supervision of peers and citizens is not given sufficient attention. How opposing sides in power relations engage and check is not usually considered within the level of power supervision. This shows that it is still difficult to change the monitoring mechanism through internal structural changes, so our country should look outside the power structure to find a solution, and political participation is the key to breaking the problem.

Xu Yang defines political participation as the influence [7] of citizens on the decisions made by the government and the internal appointment process. Yang Guangbin defines political participation as citizens influencing the actions [8] of the government through questioning, voting and petitioning. Cai Tuo, on the other hand, simply defines political participation as the influence [9] of ordinary citizens on the bureaucracy. Li Zihao argues that public political participation plays [10] a significant role in improving the quality of the ecological environment and improving the level of government governance, as an external adjustment to "government failure". Yu Wenchao conducted an empirical study on the environmental situation in various provinces and found that citizens' satisfaction with environmental governance was increased by petitions, proposals to government agencies to solve environmental problems, and online discussions and feedback on environmental governance issues. At the same time, the responses received from reflecting issues directly to the National People's Congress and the Chinese People's Political Consultative Conference tend to be more effective, and the responses received from the participation of online public opinion tend to be more rapid [11]. Qi Lingling's analysis suggests that people's political participation has improved the environmental governance capacity of local governments, and that the improvement in the government's governance capacity has to some extent reduced the frequency [12] of petitions and letters from people. Hu Jinxiu's research found that citizens' actions in environmental protection have contributed to the government's improved capacity in environmental governance, which in turn has effectively reduced the frequency [13] of topics related to environmental protection being mentioned in the National People's Congress. However, there are some dissenting voices, such as Wu Jiannan, who analysed data from 31 provinces and concluded that public participation did not significantly affect environmental governance outcomes [14]. Han Chao analyses data from major cities and concludes that public participation does not have an effective impact [15] on government decision-making and satisfaction with environmental governance. Based on this, the following research hypotheses were formulated.

H2: Political participation has a positive effect on satisfaction with environmental governance

2.3 Responsive regulatory role of government

In conjunction with the above, our hypothesis is that both government response and political participation have a positive effect on satisfaction with environmental governance, i.e. environmental governance and political participation can increase satisfaction with environmental governance, but the effect of government response on political participation is not clear to us. The academic community has also conducted research on this issue in different aspects: Dongbo et al. argue that government response and public political participation are actually a form of interaction between the

two sides, with the public expressing their demands in various ways and the government providing citizens with reasonable channels to voice their opinions through various means, and that when this interaction develops in a positive direction, citizens' political participation will become more effective [16]. Li's research suggests that the government's public response provides stronger support for citizens' political participation and enhances the government's credibility [17] in governance. Han Ping and Dong Jue used the three indicators of "response time, processing time and outcome" as indicators of the government's response to political participation, reflecting the extent to which the government attaches importance to, and takes responsibility for, the issues raised by citizens and the government's ability to perform its duties. They found that when these three indicators tend to be positive, citizens will be more willing to communicate with the government in a reasonable manner and offer more constructive opinions [18]. Li Xiaojun studied citizens' political participation through the Internet in the new era, and found that timely government responses on the Internet can often create a chain effect and help [19] to resolve a series of related incidents. Wu Xugang analysed the time taken to ask questions about environmental issues on the internet in recent years and the time taken to respond to them, and found that government responses can often reduce the time taken to resolve issues. He believes that government responses improve the general environment for citizen political participation and optimise the channels [20] for it.

H3: Government response plays a positive moderating role between political participation and satisfaction with environmental governance.

3. Data sources and variable measurements

3.1 Data sources

A total of 10,986 valid questionnaires from the China General Social Survey (CGSS) were used as the data source for this paper. The Chinese General Social Survey (CGSS) is China's first nationwide, comprehensive and continuous large-scale social survey project. The aim is to collect data on Chinese people and various aspects of Chinese society on a regular and systematic basis, to summarise long-term trends in social change, to explore social issues of great theoretical and practical significance, to promote the openness and sharing of social science research in China, and to provide data for government policy-making and international comparative studies. The China Integrated Social Survey is jointly implemented by Renmin University of China and academic institutions across the country. The CGSS is a rigorous and scientific sample of more than 10,000 households across the country each year since the beginning of the 2003 year, and the data is very representative and can truly reflect the real situation of the respondents.

3.2 Measurement of variables

3.2.1 Independent variables

The independent variables of this paper are public political participation and government responsiveness. For public political participation, the indicator selected in this paper is: Did you participate in voting in the last neighborhood council election/village council election? The corresponding question in the questionnaire is A44. The corresponding options for the question are: 1 - participated in voting, 0 - did not participate in voting. Government responsiveness consists of three indicators, F10, F11, and F12. Among these three variables, the higher the score, the higher the government responsiveness and the more effective the government response.

In order to reduce the problem of multicollinearity between the independent variables, this paper used factor analysis for the three variables of government responsiveness (see Table 1). The KMO measure obtained from the factor analysis was 0.77 and the Bartlett's spherical test was significantly correlated at the 0.000 level, indicating that the factor analysis was logically self-consistent.

Table 1. Results of the factor analysis method

	Government Responsiveness
If a resident were to go to court to claim damages from the above business, how quickly do you think the outcome of a trial would be?	0.978
If the court rules in favour of the resident, but the business does not comply with the judgment and the resident applies to the court to enforce it, what do you think is the most likely scenario for enforcement?	0.977
If a burglary and murder occurred in your neighbourhood, the victim died and the murderer escaped and there were no witnesses. How long would you estimate it would normally take to solve such a case?	0.963
Eigenvalue	2.839
Explained variance	94.64

3.2.2 Control variables

In this paper, gender, age, educational attainment, total personal income, perception of fairness index, and media use status were selected as control variables, and data were processed for age, gender and educational attainment. For age, 2015 - year of birth was used for treatment; for gender, 1 - male, 0 - female; for educational attainment, 0 - no education at all, 3 - literacy classes, 6 - primary school, 9 - junior high school, 13 - vocational high school, 12 - general high school, 13 - secondary school, 13 - technical school, 14 - specialist adult higher education, 15 - specialist formal higher education, 16 undergraduate adult tertiary education, 17 undergraduate formal tertiary education, 20 - postgraduate and above.

3.2.3 Dependent variable

Government job satisfaction has a special module in CGSS - Module B, where b158 stands for satisfaction with environmental governance (Are you satisfied with the government's performance in the following areas of work? -Environmental protection), and after processing the data its measure becomes: 1 - very dissatisfied, 2 - dissatisfied, 3 - fair, 4 - satisfied, 5 - very satisfied.

Table 2. Variable measurements

Variable type	Variable name	Measurement questions	Measurements
Independent variable	Political participation	Did you vote in the last Resident Council election/village council election?	1 - yes, 0 - no
	Government Responsiveness	1: If a resident were to go to court to claim damages from the above business, how quickly do you think the outcome of the first instance decision would be?	1-Very slow,2-Rather slow,3-Fair,4-Faster,5-Very fast
		2: If the court rules in favour of the resident, but the business does not comply with the judgment and the resident applies to the court to enforce it, what do you think is the most likely scenario for enforcement?	1 - Long delays, 2 - Largely non-implementing, 3 - Very slow to implement 4 - Generally very well implemented, 5 - Rapidly implemented
		3: If a home invasion murder occurs near your home, the victim dies, the murderer escapes and there are no	1 - The case will not be solved at all eventually, 2 - It will drag on for a long time, 3 - It will drag on for a while, 4 -

Control variables	Individual characteristics	witnesses. How long would you estimate it would normally take to solve such a case?	It will be solved soon, 5 - It will be solved soon
		Gender	1 - Male, 0 - Female
		Age at birth	
		Education level	0 - no education at all, 3 - literacy classes, 6 - primary school, 9 - lower secondary school, 13 - vocational high school, 12 - general high school, 13 - secondary school, 13 - technical school, 14 - specialist adult higher education, 15 - specialist formal higher education, 16 undergraduate adult higher education, 17 undergraduate formal higher education, 20 - postgraduate and above
		Sense of fairness index	1-Totally unfair, 2-Rather unfair, 3-Not quite fair but not unfair, 4-Rather fair, 5-Totally fair
Dependent variable	Environmental governance satisfaction	Media usage	1-Never 2-Seldom 3-Sometimes 4- Frequently 5-Very often
		Are you satisfied with the government's performance in environmental protection?	1 - Very dissatisfied, 2 - Unsatisfied, 3 - Fair, 4 - Satisfied, 5 - Very satisfied

3.3 Descriptive statistics

Descriptive statistics for all the variables designed for this study are shown in the table below.

Table 3. Descriptive statistics of variables

Variables	Average	Standard deviation	Maximum value	Minimum value	Number
Gender	0.528	0.499	1	0	1508
Age	50.508	16.756	93	18	1508
Highest level of education	9.213	4.621	20	0	1508
Sense of fairness index	3.227	0.997	5	1	1508
Media usage	2.433	1.649	5	1	1508
Political participation	0.477	0.499	5	1	1508
Government Response	2.530	0.731	5	1	1508
Environmental governance satisfaction	3.293	0.919	4.796	1.041	1508

It can be seen that the number of males and females in this selected sample is basically equal; the survey is dominated by middle-aged people, with the youngest individual being 18 years old and the oldest 93 years old; the average education level is in junior high school, and the use of new media is not very widespread due to the age distribution; people's perception of the degree of social fairness tends to be neutral. From the descriptive analysis, the mean value of satisfaction with environmental governance is 3.293, which indicates that people's satisfaction with the government's environmental governance is at a moderate to high level; the three measures of government responsiveness do not reach the average level, indicating a low level of government responsiveness; the measures of political participation do not reach the average level, and residents' level of political participation is low.

4. Regression results

Based on the above, we build the regression models one by one:

Model1. $Y = aX + c$ Y denotes satisfaction with environmental governance X denotes political participation

Model2. $Y = bZ + d$ Y denotes satisfaction with environmental governance Z denotes government responsiveness

Model3 $Y = aX + bZ + cX^* + dX^*=X*Z$ Y denotes satisfaction with environmental governance, X denotes political participation, Z denotes government responsiveness, X^* is a cross term of political participation and government responsiveness.

Separate regression analyses were conducted for the three models mentioned above and the results are shown in the table below.

Table 4. Regression results

Variables	Model 1	Model 2	Model 3
Political participation	0.114** (2.45)		0.100** (2.02)
Government Responsiveness		0.189*** (6.05)	0.124*** (2.93)
Political Participation* Government Responsiveness			0.025** (2.18)
Gender	0.108** (2.38)	0.111** (2.50)	0.103** (2.30)
Age	0.0006 (0.63)	0.0007 (0.59)	0.0007 (0.56)
Media usage	-0.060*** (-3.44)	-0.054*** (-3.17)	-0.048*** (-2.79)
Sense of fairness index	0.155*** (6.80)	0.133*** (5.78)	0.125*** (5.43)
Education level	-0.029*** (-4.69)	-0.031** (-5.21)	-0.032 (-5.18)
Constant term	3.063*** (26.14)	2.713*** (20.54)	2.740*** (19.85)
R ²	0.1044	0.1223	0.1279
N	1508	1508	1508

Note: * $P < 0.1$ ** $P < 0.05$ *** $P < 0.01$, t-values in brackets.

Overall, those who are older, male, have a high level of recognition of social justice and are less educated are relatively more satisfied with environmental governance. From model 1, for every unit increase in political participation, government satisfaction with environmental governance increases by 0.114 units, which verifies hypothesis H2, i.e. political participation has a positive effect on environmental governance; from model 2, for every unit increase in political responsiveness, government satisfaction with environmental governance increases by 0.189 units, which verifies hypothesis H1, i.e. government responsiveness has a positive effect on satisfaction with environmental governance. From model 3, the coefficient of the cross term is positive, so government responsiveness has a positive effect on political participation, i.e. government responsiveness plays a positive moderating role between political participation and environmental governance satisfaction, which verifies hypothesis H3. From the fit of the resulting model, the fit of model 3 is higher than that of models 1 and 2, except for the parameter of age, which is not significant, all other parameters are significant.

5. Research findings

5.1 Political participation can effectively increase satisfaction with environmental governance

From the findings of this paper, it is easy to see that political participation plays an important role in environmental governance as well as in other major projects and decisions. However, the level of political participation is still relatively low, mainly because the problems that have been reported to the public are not solved and no reply is received for a long time, or because the relevant departments are shirking their responsibilities and "kicking the can down the road", thus losing confidence in the government's ability. In order to solve this problem, first of all, the government should broaden the channels for reflecting problems and fully consult the public. General Secretary Xi Jinping once pointed out that the people are the perpetual driving force behind the progress of our party's governing ability, and the people are also the foundation of our party's perpetual rule. Today, with the Internet so developed, the advantages of the Internet should be given full play to improve efficiency and ensure openness and transparency of information. Secondly, to enhance the effectiveness of citizens' political participation, do not seek "quantity" but not "quality" because of political achievements, which cannot fundamentally solve the problem, and give full play to the government's internal supervision and discipline, improve the breadth and depth of political participation, and enhance the environmental governance. We must give full play to internal government supervision and discipline, improve the breadth and depth of political participation, and enhance the effectiveness of environmental governance.

5.2 Government response can effectively improve satisfaction with environmental governance

The essence of government responsiveness is to adequately respond to public concerns and to address and resolve public issues and matters in a timely and effective manner. This is also a requirement for us to build a responsive government. It must adhere to a service-oriented approach, achieve timely responses to public concerns, govern according to the law, and govern with the people. In response to the current problem of low efficiency and untimely responses by the government. In responding to issues, care should be taken to ensure the accuracy of the information, to establish an incentive mechanism within the government, to strengthen the ideological education of government officials, and to encourage government officials to interact with the public on the internet through live streaming, short videos and other popular forms to respond to their demands. At the same time, the government should actively conduct surveys, increase the number of unannounced visits, and expose enterprises with environmental problems in a timely manner to enhance the government's credibility.

5.3 Government response has a significant positive moderating effect on political participation

Guan Zhong once said, "The rise of government is in accordance with the people's wishes; the fall of government is against the people's wishes". The key to the government's role lies in the people, and the government's response can enhance the people's enthusiasm and motivation to participate in political activities, and enhance the people's sense of access, thus forming a virtuous circle. Both sides should show their commitment in this process, with the government responding responsibly and acting as a "public servant". The public should take ownership and offer constructive ideas on how to solve various problems.

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