Research on Citizen Participation in the Implementation of Public Policy in Big Data Age※

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Abstract: The advent of the big data age provides an effective tool for citizens who can better participate in the implementation of public policies. Citizens' participation in the process of public policy implementation is conducive to the better realization of the objectives of the subjects of public policy implementation, to the implementation of the "bottom-up" public policy model, to the maximization of public interest and to the citizens' needs to adapt to public policies. However, the enthusiasm and degree of citizen's participation in the implementation of public policy are relatively low, because of some subjective and objective constraints in the process. We should cultivate citizens' ability and consciousness to participate in public policies, establish a two-way interactive mechanism between the government and citizens, and strengthen the information disclosure in the process of public policy implementation.

1. Introduction
Citizen participation can improve the scientficity, democracy and rule of law in the management process of the whole country. During the whole cycle of public policy, many experts and scholars have paid much attention to the process of citizen participation in public policy-making, such as Zhao Yu and Yang Long, who have studied the basic categories, logical framework and applicable scenarios of rational choice in the public policy-making modes.[1] Wang Yanhong pointed out the idea of building a citizen participation mechanism in the process of public policy making.[2] Luo Yiping studied the expression of public opinion in local government's public policy making.[3] There are also many scholars who have done a lot of research on citizen participation in the process of public policy making, and these studies have also made many achievements. But it is far from enough to focus on or only study the process of public policy making. As we known, in the whole process of public policy making, not only the process of public policy making needs citizens' participation, but also the process of policy implementation needs citizens' participation. And citizen participation in the implementation of public policies is a manifestation of the modernization of China's governance system and governance capacity.

2. The significance of citizen participation in implementation of public policy in the era of big data
The two main modes of government or organization are "top-down" or "bottom-up" communication. Big data provides a platform for information flow for these two models. Citizen participation is the embodiment of "bottom-up" mode. Citizen participation is also a guarantee of putting the people in charge of the country into the national political life and social life. At present, many public policies have deviated from the original objectives in the implementation process, and have not achieved the desired results. One of the important reasons is the lack of civic participation. In the process of public policy implementation, citizens not only participate passively, but also need to participate actively. Therefore, it is of great significance for citizens to participate in the implementation of public policies. It is conducive to the better realization of the objectives of the subject of public policy implementation, to the implementation of the "bottom-up" public policy model, to the maximization of public interests and to the citizens' needs to adapt to public policies.

2.1 The main body of public policy implementation is better able to achieve the goal
In the process of implementing public policies, the executive bodies participate and supervise jointly. In this way, the effect of implementation will not deviate from the expected effect or produce a small deviation, which is conducive to the realization of public policy objectives. The goal of public policy is to maximize social interests and protect social interests. Whether the goal of public policy can maximize public interests depends on whether citizens participate in the process of public policy implementation and the depth and breadth of the process. If citizens participate in the process are very positive, this will directly affect the implementation of public policies or it is a supervisory role. In the process of public policy implementation, it is difficult for the all subjects to ensure that there is no "rent-seeking" situation. After the citizens participate, the public policy execution subject will be strengthened external supervision, will not deviate from the direction set in the process of public policy implementation, and will be conducive to better achieve the objectives of the public policy execution subject.

2.2 It is conducive to the implementation of a bottom-up public policy model
"Bottom-up" is a very common way of information transmission. At present, the main mode of information transmission is "top-down" mode in China, which transfers information from top to bottom. The benefits of this approach are self-evident, but there are also many problems. When the superior government conveyed information to the lower level government, the lower government will selectively transmit information to their own subordinates. Choosing the information beneficial to their own level will continue to transmit to the lower government, but the information unfavorable to their own level will not be transmitted or as little selective transmission as possible. The "bottom-up" transfer mode just makes up for the "top-down" transfer mode. Citizen participation in the process of public policy implementation is also a form of bottom-up feedback. It can enable citizens to reflect the deviation arising from the implementation of public policies in time, so that the government can respond and adjust in a timely. Citizen participation in the implementation of public policy is conducive to the implementation of the bottom-up public policy mode.

2.3 It is conducive to maximizing the public interest
The essence of public policy is to carry out a series of activities to maximize public interests and social interests. Citizen participation in policy implementation is conducive to understand the public's interests and requirements in time, and it can increase citizens' awareness and support of the content of public policy implementation, enhance the sense of trust in the government. And then it can actively promote the implementation of public policy, and enhance the performance of public policy implementation. [4] Citizens' participation in the process of public policy implementation is conducive to their voice for their own interests, and they can give advice to government policy-makers. The timely response of the government executing public policy personnel is conducive to the citizens' affirmation of the government, government staff and public policy. The timely response of the government's public policy practitioners is conducive to citizens' affirmation of the government,
government staff and public policies. This is also conducive to the efficiency, scientificity, democracy and rule of law of the government in the management process, and this is conducive to the interests of all parties. In addition, it can promote the maximization of public interest.

3. Embarrassment of citizen participation in public policy implementation in the era of big data

The participation of citizens in the implementation of public policies is of great significance. We all know that citizens should participate in the implementation of public policies. However, there are still some difficulties in real life that make it difficult for citizens to participate in the implementation of public policies. There are many reasons for this. There are subjective reasons for citizens who do this. Firstly, the awareness of citizen participation is not strong. Secondly, citizens lack corresponding capabilities. In addition to subjective reasons, there are also objective reasons. The mechanism of citizen participation in public policy implementation is not perfect and information asymmetry exists in the process of citizen participation.

3.1 Subjective reasons

3.1.1 The consciousness of citizen participation is not strong

After many public policies have been issued, many citizens think that their interests are not close enough. They will not take the initiative to participate in this public policy, and will be lack of awareness of active participation. They will not take the initiative to participate in this public policy, lack of awareness of active participation. The main reasons for this phenomenon are the negative influence of traditional political culture and the absence of the concept of rule of law. First of all, the main negative impact of traditional political culture is that citizens still have a patriarchal notion in their minds. They participate or do not participate, while the result is basically the same. At present, this notion is widespread. Even if citizens participate, it is also a kind of negative participation. Then the effect is minimal. Secondly, citizens have not formed the concept of the rule of law, and do not know that citizens' participation in the implementation of public policies is not only citizens' rights but also citizens' obligations.

3.1.2 Citizens lack corresponding capabilities

In the era of big data, public policy implementation requires active participation of citizens. And citizens need to voice their own interests. The public policy implementation process needs citizens who have a certain degree of theory and a certain degree of technical ability. However, due to the limited economic, material conditions and educational level of citizens, the ability of them to participate is limited, and the ability of citizens to participate in the implementation of public policies is difficult to meet the capacity requirements. The limited capacity of citizens can not lead to participation. Even participation is also "helpless" participation or "utilitarian" participation or "disappointment" participation. First of all, "helpless" participation refers to citizens who are unable to participate in the implementation of public policies, but they have to participate. If this is the case, it can be imagined that the implementation effect is far from expected. Secondly, the "utilitarian" participation means only purely for the sake of one's own interests, without taking the overall situation into account. Finally, "disappointed" participation means that the citizen's own ability limits the achievement of the desired result and causes disappointment.

3.2 Objective reasons

3.2.1 The mechanism of citizen participation in public policy implementation is not perfect

In China, the current process of public policy implementation is mainly a "top-down" model: the central government formulates public policy, and the middle-level government transmits the corresponding information, and the grass-roots government implements public policy. In this process, citizen participation is basically ignored. This mechanism makes it difficult for citizens to actively
participate in the implementation of public policies, and this mechanism can easily lead to "middle obstruction" phenomenon. The so-called "middle obstruction" phenomenon refers to the middle-level cadres in the implementation of public policy, they tend to support the interests of their own or advocated by the department's projects, and take negative actions against those which are not in their own interests. They will be bound by their own interests to change public policy to varying degrees. The reasons for the "middle obstruction" phenomenon are lack of supervision and not making good use of big data which can announce relevant information.

3.2.2 Information asymmetry in the process of citizen participation in public policy implementation
There is asymmetric information in many areas, including our public policy field. Information asymmetry exists in the process of formulation, implementation, evaluation, adjustment and termination of public policy area. In the process of public policy implementation, information asymmetry is mainly reflected between the central government and the middle-level government, the middle-level government and the grass-roots government, the government and citizens. Information asymmetry directly leads to the unequal status of the two sides, and the party with information is in an absolute dominant position. In the process of public policy implementation, citizens are basically at the receiving end of information, which leads to the least amount of information received by citizens. This leads to a far cry from the expected effect of citizen participation in public policy implementation.

4. The way of citizen participation in public policy implementation in the era of big data
There are still some problems in the process of citizen participation in the implementation of public policies in the era of big data. This paper puts forward corresponding solutions. Firstly, the government should cultivate the ability and consciousness of citizens to participate in public policies. Secondly, we should establish a two-way interaction mechanism between the government and citizens. Finally, we should strengthen information disclosure in the process of public policy implementation.

4.1 Training citizens' awareness and ability to participate in public policies
In the big data era, the government needs citizens to participate actively in the implementation of public policies, but the existing capacity of citizens can’t meet the needs of the government. So the government needs to cultivate the awareness and ability of citizens to participate in public policies.

First of all, we need to cultivate citizens' awareness of participation in public policies. Let citizens know that participation in the process of public policy implementation is not only a citizen's right but also a citizen's obligation. Let citizens know that participation in public policy implementation is not only a citizen's right but also a citizen's obligation. Participation is conducive to the better realization of the objectives of the main public policy implementation, is conducive to the implementation of the "bottom-up" public policy model, is conducive to the maximization of public interests, and is conducive to the needs of citizens to adapt to public policies. All these benefits are related to the vital interests of citizens, so that citizens can take an active part in the implementation process of public policies. This is also the most important link for citizens to participate in the implementation of public policies.

Secondly, we need to cultivate the ability of citizens to participate in public policies. If citizens are conscious and not able to participate, they will not achieve the desired results. Cultivating ability is not accomplished overnight. It needs a certain period of time. It is necessary to let citizens master the process of participating in the implementation of public policies in the process of practice. First, the government should cultivate the basic ability of citizens to participate in the implementation of public policies. For example, they should actively respond to the government departments, after the damage of citizens' interests. Second, we should elect citizens who have certain abilities as citizens' representatives and let them react positively to the negative effects brought about by public policy implementation. This minimizes the negative effects of public policy implementation. In the process of citizens participating in the implementation of public policies, the primary task is to cultivate citizens' awareness and ability to participate in public policies.
4.2 Establish a two-way interaction mechanism between government and citizens
In addition to cultivating citizens' awareness and ability to participate in public policies, citizens' participation in the implementation of public policies requires a mechanism that can interact with the government in both directions. Let our Deputies to the people's Congress the channels of communication between the people and the government. In the process of public policy participation, in addition to the need for the government's internal representatives to respond to relevant circumstances, it is also necessary for external representatives from the government to respond directly to the implementation of public policy. Therefore, a two-way interaction mechanism between the government and citizens has been established. As shown in the following picture:

![Diagram of two-way interaction mechanism]

Central Government

Middle Level Government

Representatives of Citizens

Grassroots Government

Citizens

Constructing Model of the Two-way Interaction Mechanism between Government and Citizens
Through the above two-way interaction mechanism between the government and citizens, we can see that the central government, the middle-level government, grass-roots government, citizen representatives, citizens form a two-way interaction. On the left side is the interaction within the government, which is the present system of the People's Congress, while on the right side is the direct connection between citizens and the upper levels of government, which avoids the phenomenon of "middle obstruction". This two-way interactive mechanism between government and citizens and the people's congress system form two kinds of mechanisms for citizens to give feedback to their superiors. In both ways, big data is needed as a technical platform, which is more conducive to citizens directly conveying the information that they want to express to the higher government, and it can avoid or reduce the probability of information distortion. Through the two-way interaction mechanism and the people's Congress system, the two channels for citizens to participate in the implementation of public policies are more secure.

4.3 Expanding the scope of information disclosure in the implementation of public policies
Under the background of "big data +", and the rapid development of the domestic Internet, this provides a new opportunity and platform for information disclosure in the process of public policy implementation. This also provides an Internet channel for information disclosure, which is faster and more efficient than traditional channels. The government can make use of Internet accessory products such as Weibo, Weixin and government portal website for information disclosure. The main way of information disclosure is to open the government voluntarily. And citizens apply for publicity according to law. Firstly, the government needs to publish the basic information of citizens participating in the implementation of public policies. Secondly, some private to a certain degree of privacy, citizens in accordance with the law to apply for public information, the government should also be open according to law. Finally, it is necessary to make public participation in public policy implementation procedures. If the enforcement procedure is not open, citizens will be in a passive position in the process of implementing public policies and do not know how to implement them. Even if they take one step, they don't know what to do next, and the end result is that it's far from the expected goal.
5. Conclusions
This paper discusses the significance, the dilemma and the approach of citizen participation in the process of public policy implementation in the era of big data. Next, we need our government to invest heavily to cultivate citizens' awareness and ability to participate in public policies, to establish a two-way interactive mechanism between the government and citizens, and to expand the scope of information disclosure in the process of public policy implementation. Let citizens and the government form an interactive mechanism of mutual trust, and make society gradually towards a "good governance" situation.

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