The Role of New Media for Governance Innovation to adopt Climate Crisis:

Suggesting the Comprehensive Evaluation Mode

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Abstract

The purpose of this study is to establish a Comprehensive evaluation model about new media for governance innovation ability AHP analysis model. Governance innovation in the era of climate crisis is of great significance to national development and improving the level of national critical infrastructure and is an important part of adopt climate crisis. With the development of new media, this paper focuses on analyzing the innovation of using new media to adopt climate crisis. According to the characteristics of new media applications, how to better conduct governance innovation through new media is analyzed, and the analysis results can be applied to government governance innovation in the era of climate crisis.

Key words: crisis, climate crisis, new media, crisis governance, governance innovation

I. Introduction

Under the background of global climate warming, the era of climate crisis has accelerated, and various frequent climate crisis have seriously threatened social stability and people's safety, affecting the development of globalization, and the adopt to climate crisis has aroused wide concern around the world. Nowadays, as the main communication channel, new media has changed the way for people to obtain information, provided a new communication channel for information transmission, promoted the rapid transmission and exchange of all kinds of information, and provided a platform for the government governance to the crisis (Van Aelst & Walgrave, 2004; Rafaeli, 1988; Wickler, *et. al.*, 2011). As a communication medium, new media can enhance the communication power of all kinds of information, and with the support of mainstream media with the background of government, it can better ensure the authority and credibility of crisis information (Metzger, *et. al.*, 2003; Linders, 2012). New media has been widely used in the national governance of various countries, has become an important way to adopt crisis events and an irreplaceable part.

Global climate change has become an indisputable fact. Climate change causes long-term and sustained extreme climate crisis events to spread from the natural system to the economic and social system (Mirza, 2003; Chao, 2021), will not only cause significant economic losses and casualties, but also challenge the government's crisis governance ability (Haines, *et. al.*, 2006; O'Brien, *et. al.*, 2006). Promoting innovation of government governance by information technology is an important proposition for realizing modern national governance (King & Cotterill, 2007: 334), government governance to climate crisis should conform to the development of the times and social needs. With the rapid development of new media, the way of the public to obtain climate information is also constantly changing, which promotes the integration of the national public climate crisis prevention and reduction popularization with new media and makes full use of new media to explore and change the traditional crisis governance way.

Scientific prevention of various climate crises, reducing casualties and social losses, is the responsibility of the government crisis governance to ensure national public safety (O'Brien, *et. al.*, 2006; Schipper & Pelling, 2006).

Innovation, science and technology, and intelligence are the general trend of the development of modern society (Nabila, *et. al.*, 2021), and the integration of new media into the national critical infrastructure construction now is an inevitable trend of national development and progress, as well as a strong support and effective way to strengthen the construction of national critical infrastructure. Therefore, in the era of climate crisis, innovation should be constantly made in government crisis governance.

Although there is a lot of literature on how to manage climate crisis in the era of climate crisis, few people have studied new media as a key application in crisis governance in the era of climate crisis, especially how to adapt to the development of the Internet era, and there are few studies on climate crisis governance through new media. As the public pays more and more attention to the government's adopt to the climate crisis, many studies have pointed out that the current climate crisis communication channels are relatively simple, resulting in less crisis information and publicity and education received by citizens, poor effect, and weak awareness of crisis prevention and reduction (Moser & Dilling, 2007; Cottle, 2008; Arlt, 2001). Criado, *et. al.* (2013) studied the application of social media in government governance, which is becoming one of the major trends in global e-government research and practice. Therefore, the research significance of this paper is how the government can maximize its service to government crisis governance in the era of climate crisis by correctly handling the relationship with new media.

In the era of climate crisis, Therefore, in the era of climate crisis, the purpose of this study is to establish a comprehensive evaluation model about new media for governance innovation ability AHP analysis model to adopt climate crisis for the future development of new media for government climate crisis governance to adopt climate crisis, form a comprehensive evaluation model, and conduct analysis to find out the innovation of new media application for the future development of new media for government climate crisis governance.

II. Theoretical Background

1. Climate Crisis and Governance Innovation

1.1 Climate Crisis

In 2015, the《Paris Agreement》pointed out that climate change will produce a sense of urgency and potentially irreversible threat to human society and the earth. In September 2019, the United Nations Climate Action Summit, based on the latest situation of climate governance, stressed the importance of climate crisis response, and proposed that "climate change" has now become a "climate crisis".

Climate crisis refers to the direct or indirect damage caused by climate change to people's lives and property, national economy, and national critical infrastructure (Forzieri, *et. al.*, 2018; Patwardhan, *et. al.*, 2007). The climate crisis causes extreme weather events such as forest fires, hurricanes, floods, and heat waves, etc., as well as persistent crises such as droughts, endangered plant and animal species, public health, loss of habitat and food shortages, etc. With the rapid development of globalization, the global climate crisis is deepening and rapidly becoming more dangerous than any crisis we have ever faced (Gore, 2006: 10), and has a negative impact on the economic development (Gilding, 2012), public life (Bodin & Bjorklund, 2022), ecological balance (Zhang, 2013) and government credibility (Dong, *et. al.*, 2018) of all countries.

1.2 Governance Innovation

Government governance refers to the various intervention activities carried out by the government administrative system as the main body for social public institutions (Kettl, 2015; Stoker, 1998). Promoting innovation in the national governance system and modernization of governance capabilities is an important task facing every country. Governance innovation refers to comprehensively utilizing the resource allocation of the state, market and society under established systems, systems, mechanisms, and management conditions to continuously optimize the

relationship structure of governance elements, explore new social governance practice models, and continuously improve governance capabilities and efficiency process (Filatotchev, 2020; Grimm, et. al., 2013; Lee & Kwak, 2012).

Technology application (Sharif, 2012), policy support (Patanakul & Pinto, 2014), system construction (Chung, 2002), etc. are all important contents of government governance innovation. Information technology plays an increasingly important role in promoting the modernization of national governance systems and governance capabilities. Therefore, governance innovation through new media is not only an important means to "transform government functions and build a service-oriented government", but also an important way to improve the guidance of social public opinion and explore new models of government governance.

2. Adopt New Media to Climate Crisis Governance

2.1 Adoption of Climate Crisis

Government adoption of crisis refers to timely and effective response to all kinds of sudden public crisis events, as far as possible to prevent the occurrence of public crisis events, reduce its negative impact, is the focus of governments to strengthen national critical infrastructure.

The economic losses and human losses caused by the climate crisis are increasing year by year. Timely and accurate reminders, early warnings, and taking effective preventive measures are the key to dealing with the economic losses and human losses caused by the climate crisis (Rogers & Tsirkunov, 2013; Field, 2012). Different climate crises have different impacts and scope. Sustained climate crisis such as heavy rains and earthquakes can trigger crises such as environmental pollution, traffic paralysis, and infectious diseases (Miyan, 2015; McEntire, 2021; Quigley, et. al., 2020), also affecting water resources such as high temperature and drought will greatly reduce the use of clean energy and significantly reduce food production (Hanjra & Qureshi, 2010; Misra, 2014), to protect the environment and maintain ecological balance and sustainable development of the country, we should actively respond to the climate crisis and reduce the occurrence of climate crisis.

When the climate crisis occurs, people often have panic and anxiety, which will have varying degrees of impact on daily life and can seriously lead to social unrest and other problems (Evans, 2019; Berry, et. al., 2010), so taking effective countermeasures can stabilize people emotions and maintain social stability. Whether the country can effectively prevent climate crisis is one of the factors that reflect the level of scientific and technological development, the strength of the government's organization and coordination ability, and whether the government governance is comprehensive (Cardona, 2013; Comfort, 2007; McEntire, et. al., 2002).

In the era of climate crisis, the government's good adopt to climate crisis can not only reflect the level of crisis governance of a country (Eriksen, et. al., 2011), but also of vital significance for minimizing losses caused by crisis, ensuring economic and social development and people's safety and well-being (Smith, 2013; O'Brien, et. al., 2006).

2.2 The Role of New Media

New media is a form of media with the development of the Internet appears under the new technical support system, such as digital newspaper, digital radio, mobile TV, network, etc. Now, the mode of information dissemination based on new media has taken shape, which is mainly characterized by the combination of advanced Internet technology and rapid means of information transmission, and the transmission form of information provided to users through the server side, making it easier and faster for people to obtain all kinds of information.

Zilberman, et. al. (2012) defined adopt as a change in the practices or technologies used by economic agents or communities. Therefore, in the government's adoption of climate crisis, new media has become an important way for the public to obtain crisis information due to its fast, open, and massive communication characteristics (Zhuang, 2016; Imran, 2015).

When climate crisis occur, new media can give full play to its communication advantages, intervene quickly, and release crisis information comprehensively and timely (Sanson, *et. al.*, 2019; Wang, *et. al.*, 2021); with its wide coverage, high adoption rate, timely dissemination, and strong communication capabilities, it has become an essential information channel for people to prevent disasters and emergencies (Reddick & Norris, 2013; Zhang, *et. al.*, 2016; Wright & Hinson, 2008) and stabilize the public mood and social order, timely launch disaster relief to reduce the loss of people's lives and property; it has also become an important way for the government to unite the masses, gather social forces, overcome public opinion crisis, and direct crisis governance (Cook, 2012; Simon, *et. al.*, 2015; Alexander, 2014).

Therefore, through literature review, in the government's adoption of climate crisis, new media carried out the process of climate crisis information transmission, as shown in <Figure 1>.
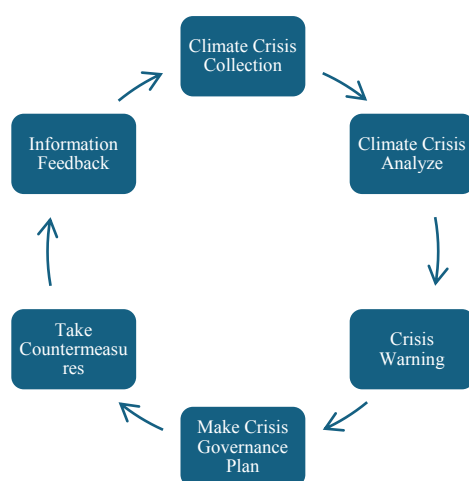
<Figure 1> Adoption of climate crisis by new media

All the first, government should establishment of a new media platform, the use of Internet, big data and other Internet technologies can achieve real-time climate crisis information collection (Hassani, *et. al.*, 2019); new media can realize real-time detection of network information throughout the day and analysis of climate data (Gu, *et. al.*, 2016); by monitoring the development situation and issuing crisis warning through new media (Alexander, 2014); make crisis governance plans in a timely manner (Park, 2022); the government will take the countermeasures to the public by new media, greatly improving the timeliness of public access to information (Han, *et. al.*, 2020); both the public and the government can use new media to provide information feedback and provide reference data (Chun, *et. al.*, 2010) for future climate crisis governance. The use of new media to adoption of climate crisis can expand the channels of crisis information collection, facilitate the government and people to obtain first-hand information in a two-way manner, and further improve the real-time and accuracy of climate crisis risk warning and assessment.

3. Governance Innovation by New Media

Zhong & Lin (2023) pointed out that government crisis governance needs to build an open communication platform with the help of new media. The acquisition, transmission, reception, and feedback of climate crisis information can be realized through new media, which makes the transmission of climate crisis information timelier and accurate (Collins & Murroni, 1996; Livingstone, 2002; Fu, 2024), provides a strong support for crisis governance. The use of new media by the government as a direct way to interact with the audience is conducive to controlling public opinion and responding to rumors, and protecting the reputation of the government (Kavanaugh, *et. al.*, 2011). New media makes the communication forms of government crisis information diversified and big data will push the reality of the approaching crisis in a timely manner (Li, 2022; Chun, 2016), providing the public with more easily understood and accepted information and better adoption for climate crisis.

To sum up, in government crisis governance, new media not only dominates crisis response measures such as issuing authoritative information, coordinating rescue work, stabilizing social order, and restoring production and life, but also assumes the key functions of information collection and integration and receiving feedback from the public. In the AHP model, the target level is the evaluation of new media application, and the evaluation indicators of new media application are divided into four secondary indicators: official new media construction (B1), information dissemination (B2), management service (B3), and application effect (B4). The specific indicators are explained as follows：

1.　Official New Media Construction (B1):

The study of Repetto (2008) points out that the United States has a high adaptability to the climate crisis because it has abundant technology, economic resources, good organizational ability, and well-educated talents. With the advent of the new media era, the government information work is also developing towards big data and intelligence. The establishment of an official new media platform for climate crisis is a new trend of governance in the era of government climate crisis. However, the research points out that there are problems of monotonous content and single form in climate crisis information dissemination, and the information is limited when spreading (Leary, *et. al.*, 2001; Liu & Wu, 2024).

The construction of new media official platform is the basis for the government to conduct crisis management through the media. This study, with reference to relevant research and combined with the actual situation, evaluates the platform infrastructure construction(C1), professional team construction level(C2), operation efficiency of new media platform(C3), and platform improvement and innovation(C4).

2.　Information Dissemination (B2)

This study will evaluate the four aspects about new media information dissemination: acquisition(C1), transmission(C2), reception(C3) and feedback(C4) of various climate crisis information between the government, social and people through new media.

3.　Management Service (B3)

Government departments have a large amount of information. In climate crisis management, timely collection, and release of information through new media is the most important and direct channel for the public to obtain crisis information (Kavanaugh, *et. al.,*2011; Panagiotopoulos, *et. al.*, 2016). However, at present, developed areas and remote areas have a large difference in the impact of receiving climate information, especially in areas with low information infrastructure construction (Satterthwaite, *et. al.*, 2012; Mirza, 2003). After the occurrence of natural disasters, how to popularize crisis information is the key to strengthen new media. In the era of big data, with the use of various technologies, the importance of network monitoring and public opinion management is increasing day by day (Hassani, et. al., 2019; Park, 2022). Many scholars have discussed the standardization of citizens' personal information transparency and privacy protection (Chen & Cheung, 2017; Mantelero, 2017)..

The government management service of new media is the guarantee of people's safety when the climate crisis occurs. This study will be evaluated from four aspects: Crisis information collection and release (C1); Popularization of crisis information (C2); Public opinion crisis management (C3); Personal information security management (C4).

4.　Application Effect (B4)

New media has transformed the communication of climate crisis information from a single text mode to a diversified form of expression, providing the public with all kinds of text, pictures and audio information that are easier to understand and accept (Rafaeli, 1988; Li, 2022), so that people can easily obtain information of interest. Big data will push the surrounding crisis in a timely manner, so that the public can better adapt to the changes in the surrounding environment during emergencies (Kamel Boulos, *et. al.*, 2011; Hassani, *et. al.*, 2019) and achieve effective interaction between the government and the public.

The application effect of new media is the focus of new media application innovation investigation. This study will be evaluated from four aspects: Diversification of information acquisition methods(C1); Optionally receive information(C2); Get nearby information (C3); Increase interactivity(C4).

III AHP Model Establishment
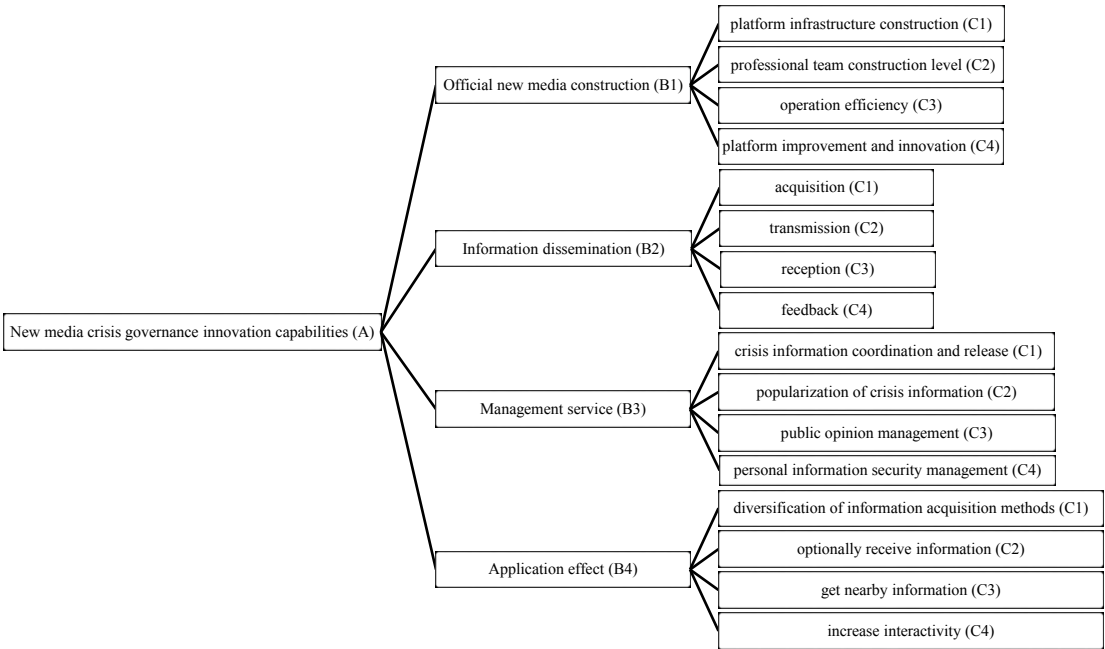
<Figure 2> Comprehensive evaluation model about new media for governance innovation ability.

IV Conclusion

In the era of climate crisis, although the meteorological department, emergency management department and other government departments currently use various means to transmit information about climate crisis, the impact on the public is not far-reaching. New media rely on the Internet as a communication medium and have access to a large amount of information due to its advantages such as wide coverage and rapid dissemination. Therefore, it is the current focus to establish a new media platform to do a good job in the climate crisis governance.

Using new media to manage the climate crisis can change the serious and rigid image of official work. Under the premise of rigor, it can appear in front of the public in a relaxed and fresh image, communicate with the public in a timely manner, answer questions and solve doubts, and fundamentally suppress the birth of rumors. Using new media to increase the popularization of climate crisis knowledge, break online rumors, and moderately eliminate unnecessary panic among the public, it also contributes to the development of the entire social civilization.

For a long time, the public has only known and perceived the climate crisis through channels such as television and the Internet and knows little about the country's climate crisis management work. Using new media to strengthen the public's understanding of the country's climate crisis work, eliminate the public's misunderstanding of the climate crisis governance work, and gain understanding and support, and create a harmonious meteorological environment, is of great significance to the development of the country's critical infrastructure work.

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