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The Public Interest in the Digital Age: Exploring the Emerging Roles and Governance Models of the AI as a Common Good

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Abstract

With the continuous development of artificial intelligence, we are living through the era of digital transformation, and the fourth Industrial Revolution is a paradigm change with unprecedented speed, scale, scope and complexity, and is fundamentally transforming production, consumption and society as a whole. As the basic unit of public management research, data has established a strong connection between the promotion of digital revolution and the change of public management research paradigm. The rise of AI technologies has enhanced AI governance and brought unprecedented help to policymakers. This study has used a cross-sectional quantitative design to capture perception and attitude towards AI as common good from a sample of 400 Chinese responders coming from diverse age, group and occupation categories. The key factors which measured were public awareness of AIGC, the extent of its utilization in government policy, public attitudes toward AIGC, and public participation in policy development. The findings indicated that public understanding and trust are paramount to successfully integrate Ai as common good in governance framework. Public enthusiasm and participations are highly affected by trust and public understanding. To deliver policies without much resistance, heightened awareness, participations and trust becomes essential.

Keywords: *Artificial Intelligence Governance, Digital Transformation; Public Management Paradigm Shift, AI Policy Making, Transparency in AI Governance.*

Introduction

The scientific and technological revolution interacts with the research paradigm of public management by influencing the field of practice and technical capabilities of public management. In the past, the scientific and technological revolution showed a weak correlation with the research paradigm of public administration. Entering the digital age, data has become the basic unit of public management research, which promotes the close connection between the digital revolution and the paradigm change of public management research (Yu et al., 2023). On the one hand, new data-driven models are systematically changing the way economies and societies operate and redefining the governance issues that public administration needs to address. On the other hand, data links public management practice areas, governance tools, and analytical methods, highlighting the priority of data - and algorithm-based research workflow models in public governance tool selection and public management knowledge growth (Yu et al., 2023). At the same time, the development of artificial intelligence has brought multiple impacts such as science, technology, data, network and information to globalization and the world political and economic process. Artificial intelligence (AI), also known as machine intelligence (MI), is an intelligent behavior or activity presented by a machine in contrast to the natural intelligence (NI) possessed by humans and other animals. As a group of emerging technologies, artificial intelligence has the potential to have any impact in any field (Gong, 2018). Take social media, an area that was almost unimaginable 20 years ago but has now been driven by the widespread use of artificial intelligence. Through content moderation systems, artificial intelligence has become a repository of information for people around the world to exchange information, consume news, and disseminate advertising. In addition, AI applications can be used as political tools, such as by spreading fake news to influence voter behavior (Christian et al., 2023). And social media algorithms themselves can create clogged information cocoons, breeding ground for polarization, conspiracy theories, and hate speech. However, AI can once again be seen as the solution to these problems.

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Recently, China's Artificial Intelligence Security Center released a brief statement signed by OpenAI and DeepMind executives. Turing Award winners, and other AI researchers that contained just one sentence: "The risk of extinction posed by AI should be mitigated in the same way as other pressing global social problems, including pandemics and nuclear war." Warning that their life's work could destroy all of humanity. Artificial intelligence has improved human productivity and quality of life, but it has also caused a series of controversies, confusion and concerns about the potential threat of AI in the whole society. The new era of AI inherently requires new governance concepts and forms of governance. This means that governance systems and governance capabilities must achieve cross-level leaps: from traditional governance to Internet governance, and then to AI precision governance. AI precise governance must adhere to the four principles of innovation, moderation, balance and pluralism, and construct a multi-level and diversified new governance model with the cooperation and participation of multiple entities such as the government, the market and social organizations, which can not only reasonably cope with many possible risks, but also actively support the orderly development of artificial intelligence (Pang, 2018).

Therefore, this study aims to explore the trustworthy governance of artificial intelligence, help policy makers to provide feasible innovative governance methods, and discuss the potential risks brought by artificial intelligence and propose feasible solutions. In this study, qualitative research methods are mainly used, while quantitative analysis is also added to contribute to the existing literature.

Based on the above research purposes, the research will mainly explore the following contents. First of all, in the era of digital transformation, generative AI accelerates the process of digital transformation for the generation and dissemination of text, image, voice, video, code and other information content, and also has an impact on public services and public policies of citizen participation. Second, is globalization still truly globalization? Artificial intelligence is not only an important force driving economic and social development, but also a strategic field for countries to compete for layout. But in the final analysis, the beneficiaries of AI development will be all of humanity, so how AI can serve as a public good among countries to help humanity provide long-term sustainable development and governance.

The structure of this paper is as follows; this research is divided into five chapters. The first chapter introduces the research purpose. With this purpose in mind, Chapter 2 provides an extensive literature review. The third chapter discusses the empirical method, and the fourth chapter gives the research results and discusses briefly. Finally, Chapter 5 discusses the research results and makes a summary.

Literature Review

The Relationship Between Artificial Intelligence and The Public Interest

Artificial intelligence (AI) is setting its foot in multiple fields and subareas (human intelligence, pattern recognition, natural language models, etc.) and we are witnessing the AI innovation capabilities evolving every second. With that, we should have started to move our focus from private interest to public interest. There have been many studies conducted in an effort of trying to understand AI whether it is a deterministic technology, decision-making technology, or merely a buzzword on using statistical models with the aid of mass computational power to make deeply flawed predictions (Dignam, 2020). However, before we can delve into the designs of laws and regulations, a stable definition of AI is needed so we can govern this common good effectively (Mazzucato et al., 2022; Thierer and Castillo, 2016). When it comes to the common good and its public interest, we need to introduce public interest regulations for the benefit of all, be it AI or not, we have similar applications on pharmaceutical products, energy, new nanotechnology, independent journalism, and many more. In addition, we must look into the contributions of new technologies and how these technologies are impacting public life, good and bad. Humans, especially experts in the field, should still play a crucial role in decision-making and not to rely on AI which the size of training data being used is unknown or questionable. Hume and LaPlante (2019) analyze companies on managing biases and risks when developing AI. El-Sayed (2021) cited McGuinness and Schank (2021) that we must employ a user-centered approach in assessing Public Interest Technology (PIT) to ensure that PIT offers genuine services and technologies to the public.

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In the realm of the copyright system, we also need to relook at the role of AI in the authorship and dissemination of original works, which is then followed by the usage of AI by the public. Copyright law shall move forward together with the advancement of technology which serves the public interest (Craig, 2022). The discussion on copyright law, especially its implication on AI, is another intertwined argument on whether or not AI deserved to be covered by copyright law. Is there any authorship on the works generated by AI? What is counted as originality and how do we serve the public interest to promote originality, the creation of new processes/products, and the works of authorship? Nonetheless, Thierer and Castillo (2016) proposed that we should have a "permission-less innovation" especially on new technologies and business models when we are designing policy frameworks for AI.

The Potential Social Impact of AI

To date, there are no definitive answers on whether the scope of AI's advantages will be more than disadvantages but we are confident that the dependency of humans on AI is increasing exponentially. According to Buchholz (2023), one of the AI tools, ChatGPT, took just five days to gain one million users, compared to Instagram used 2.5 months, Facebook used 10 months, Twitter used 2 years, and Netflix used 3.5 years. The technological ecosystem can be enhanced through the combined effort from private and public sectors in governing the AI for longer-term common interest. The concentration of power, economic inequality, and human rights are some of the examples that AI might pose to the human nation (Mazzucato et al., 2022). For example, we see the crucial roles played by AI in improving the lives of people with disabilities through innovations in mobility aids and prosthetic devices (Parkin, 2019). While on the other hand, the AI designers trying to write the algorithms in such a way as to protect the first-hand and second-hand users, but not the bystanders. Designed bias should be avoided by strengthening the public interest regulatory implications.

Castro et al. (2019) calculated the ranking of China, the United States (US), and the European Union (EU) in the new wave of digital innovation, AI, in this case, and found that the US is leading in most categories of metrics in their report. These winning categories are talent, research, development, and hardware. With their leading points of 44.2, China is catching up with 32.3 and the EU with 23.5. China is ranked first in the categories of adoption and data. The ranking has further proven the fierce competition amongst the three in becoming global leaders in AI which will also be manifesting in their future economic output and military superiority.

With the competitiveness, ethical issues, and security of the use of AI, we must have public opinion on AI governance. Bertuzzi (2022) reported that AI providers must be able to find measures to mitigate the risk where regulatory framework sandboxes governing AI not just enhance innovation but also reduce compliance costs. Floridi and Cowls (2019) proposed that explicability, beneficence, non-maleficence, autonomy, and justice are the five principles that should be included in the unified ethical framework for AI to exist in our society.

Evaluation of existing AI governance models

Paul (2023) reviewed near to 35 articles in search of research that related to public regulation of AI technologies. He highlighted that there are three different ways to conceptualize the AI technologies regulation namely normative project of applied ethics, technocratic rational choice endeavor, and politico-economic project. Cihon et al. (2021) mentioned that the governance of AI can benefit from input and activity from its multi-stakeholders however there is very little focus on how these stakeholders can ride on the opportunities when they contribute to the governance of AI. There have been several initiatives taken in recent years in regard to the governance of AI. For example, in 2019, China introduced the Beijing Artificial Intelligence Principles and the United States released the Algorithmic Accountability Act. Two years later, European Commission AI Act was announced and will be taking effect in 2024 or 2025. According to European Commission (2021), this is the first regulatory act that regulates AI technologies application, especially high-risk AI systems. In addition, the AI Boll of Rights blueprint was released by the United States in 2021, and the Algorithmic Impact Assessment tool was introduced by Canada in 2023.

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These developed countries' effort in developing governance frameworks that document and monitor the development of AI systems has raised a good engagement with the public that policymakers are emphasizing AI as a public interest that cannot be neglected. In addition, corporations must also look beyond shareholder profits when developing AI systems in their business where public interest should be enhanced through corporate governance (Cihon et al., 2021). According to Elliott (2020), AI policies that are undertaken by China mainly focus on speeding up the development of the technology, data collection, and implementing pilots. Hence, a good governance model must encompass an effective monitoring system, data privacy, and risk management, and ensure that the AI systems are putting societal impacts as the primary goal. Xue and Jia (2021) highlighted that the existing governance framework of AI is lacking specific content and there are many controversies that lead to difficulties in the decision-making process.

As highlighted by Calo (2017), justice and equity, safety and certification, privacy, taxation, and displacement of labor are the key concerns in designing an AI policy. He mentioned that the shift toward practical applications of AI is informing the key questions in designing AI policy. Brattberg et al. (2020) argued that the EU's AI policies focus more on ethical risks and protecting fundamental rights. In comparing AI policies between China and the EU, Roberts et al. (2023) concluded that China prioritizes innovation and AI's potential whereas the EU focuses on its potential harm and impacts on the usage of AI. Nonetheless, we can see several provisions on the management of internet information systems in China that prioritize public interest and enhance the governance framework (Cyberspace, 2021). Csernatoni (2019) discussed the EU's AI strategy and highlighted that AI technologies must "respect basic human rights, human agency, and data privacy".

Methods

Research Strategy and Design

This study aims to explore the trustworthy governance of artificial intelligence in public management, from the macro level, such as how data governance combined with artificial intelligence can contribute to policy makers, and the impact of artificial intelligence to help managers in governance on the public. And at the micro level, such as the limitations of AI governance, the privacy of data protection, and the need for transparency, engagement, and accountability in AI governance. At the same time, for the impact of generative AI on public services and citizen participation, data collection will be carried out in the form of questionnaires, which are quantitative in nature and will provide conclusions based on statistical inference (Ajayi & Edewusi, 2020). Quantitative methods also help to assess the future sustainability of generative AI and discuss its risks and limitations.

The research will start from two target problems, and carry out targeted discussion and analysis on each problem. For the relevant quantitative research, the corresponding positive correlation hypothesis will be given, and the results will be obtained through empirical study. For qualitative research, more helpful decision-making suggestions will be put forward through the analysis and exploration of existing cases.

Research Question: How will generative AI affect public services and public participation?

To delve deeper into the implications of AI generative interaction (AIGC) for public administration and its benefits and implications for the public and public participation in policymaking, the study uses a multi-step approach. First, the study designed a comprehensive questionnaire to cover multiple aspects of the question to obtain the respondents' perceptions, perceptions and attitudes about AIGC. The questions cover the potential role of AIGC in different areas of application, including public services and policy making. Multi-level sample classification was used in the analysis to ensure coverage of 400

samples from different populations, including Beijing, Shanghai and other provinces in China, such as: The provinces of Guizhou, Fujian, Hunan and Hebei also have small numbers of respondents from Malaysia and the United States, while the different occupational distributions include students, workers, government workers and the general public. Taking

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into account some occupations that have a sensitive relationship with managers, incumbents,

government workers and students accounted for a relatively large proportion of the survey. They were under 18 years old, 18 to 30 years old, 30 to 60 years old and over 60 years old to explore potential differences. The data was collected via an online questionnaire using Google form, and respondents answered a series of questions related to generative AI, including its practical application in life and their understanding of government policy making.

Variables

- *Dependent Variable*

Public attitudes towards AIGC: Measures the public's positive or negative attitudes towards AIGC technology, including levels of trust, concern, support, etc.

Public participation in policy development: Measures the willingness of the public to participate in policy development, such as providing advice, attending public meetings, etc.

- *Independent Variable*

Public awareness of AIGC: Measures respondents' knowledge and awareness of AIGC technology.

The extent to which AIGC is used in government policy: Measures the extent to which AIGC is used in government policy development.

- *Intermediate Variable*

AIGC's understanding of Life Help: Measures respondents' awareness of how AIGC improves their lives.

Understanding that AIGC helps government policy development: Measures respondents' understanding of how AIGC helps government policy development.

- *Control Variable*

Age: The age of the respondent can be used as a control variable because different age groups may have different perceptions and perceptions of AIGC.

Occupation: Occupation may influence attitudes towards AIGC perception and participation in policy development.

Analysis Procedure

In terms of data preprocessing, data cleaning is carried out to ensure the accuracy and integrity of the data. Descriptive statistical methods, such as mean, standard deviation, and frequency distribution, were then used to analyze the baseline of the survey data. In addition, the normal distribution of the data is tested by using skewness and kurtosis. To assess the quality and credibility of the survey results, the study also conducted a reliability and validity analysis to ensure the reliability and validity of the questions. Second, using correlation analysis, we examine the correlation between variables, with a particular focus on the correlation between AIGC awareness and participation in policy making, as well as differences between different populations. Finally, through regression analysis, we explore the influence of independent variables (such as AIGC perception) on dependent variables (policy engagement), and explore possible mediating effects. This helps to identify potential mechanisms of action for AIGC in public policy making.

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This series of methods and steps will help us to deeply explore the impact of AIGC on public administration and policy formulation. Meanwhile, the questionnaire investigates different occupations and groups of four different age groups through online means, and diversified consideration is given to the differences in views and age groups of different groups. Through these approaches, we are expected to gain important insights into the applications and potential benefits of AIGC in the public domain.

Hypothesis: The cognitive level of AIGC is correlated with the degree of public participation in policy making

Result and Discussion

The Effect of Generative AI On Public Services and Public Participation

In this section, data analysis will be conducted step by step according to the questionnaire survey results, and the impact of generative artificial intelligence on public services and public participation will be discussed.

Descriptive Analysis

Items	Categories	N	Percent (%)	Cumulative Percent (%)
Your age	18-30	131	32.75	32.75
	30-60	255	63.75	96.5
	< 18	10	2.5	99
	> 60	4	1	100
Your job	Serving officers	137	34.25	34.25
	Student	98	24.5	58.75
	Government officials	97	24.25	83
	General public	68	17	100
Do you know the application of generative artificial intelligence technology (such as natural language processing , machine learning) in the field of public services?	Uncertain	72	18	18
	No	73	18.25	36.25
	Yes	255	63.75	100
Do you think generative AI technology has changed the quality of public services you use?	Uncertain	38	9.5	9.5
	No significant changes	44	11	20.5
	Significant improved	138	34.5	55
	Improved	175	43.75	98.75
	Quality decline	5	1.25	100
Have you ever used chatgpt to help with problems in life or work and study?	No	168	42	42
	Yes	232	58	100
How often do you use chatgpt?	Two to three times a month	89	22.25	64.25
	Two to three times a week	45	11.25	75.5
	Multiple times a day	70	17.5	93
	Multiple times in three days	28	7	100
Are the answers given by chatgpt the answers you want? Are there any deviations or incompleteness from the correct answers?	No	36	9	51
	Yes	196	49	100
Total		400	100	100

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It can be seen from the descriptive statistical analysis results that the age distribution in this survey is mainly concentrated in 18-30 and 30-60, among which 30-60 years old accounts for the largest 63.75%. Since the purpose of this survey is mainly the application of artificial intelligence in public services, the survey objects are mainly young and middle-aged people. From the perspective of occupational distribution, serving officers, students, Government officials and General public are evenly distributed. 63.75% of respondents are aware of the application of generative AI technologies (such as natural language processing, machine learning) in public services. 78.25% of respondents believe that generative artificial intelligence has improved the quality of public services, and 34.5% of respondents believe that the quality of public services has been significantly improved, and most of the respondents believe that AIGC has greatly improved the efficiency of public services. Only 58% of respondents have used chatgpt to help solve problems in life or work, indicating that chatgpt is relatively low in use and popularity.

Items	N	Mean	Std.	Skewness	kurtosis
Would you be willing to use generative AI tools to interact with government agencies，such as self-service or online consultation?（Q8）	400	3.835	1.207	-1.004	-0.103
Do you think generative artificial intelligence technology can help improve the efficiency of public services?(Q9)	400	4.19	1.028	-2.016	4.053
Do you think generative artificial intelligence has an impact on the accessibility of public services for special groups in society (such as the elderly， people with disabilities)?(Q10)	400	2.607	0.889	-0.801	-0.379
Do you think generative artificial intelligence technology will cause fairness issues (such as algorithmic bias) in government decision-(Q11)making?	400	2.083	0.948	-0.165	-1.872
Do you think generative AI technologies have had an impact on opportunities for citizens to participate in government policy making? (Q12)	400	2.375	1.008	-0.215	-1.244
Do you support the government's widespread adoption of generative AI technology in public services?(Q13)	400	3.792	1.278	-0.88	-0.515

On the question of whether they are willing to use generative AI tools to interact with government agencies, the mean is 3.835, which shows that most people are willing to use AIGC for government management. At the same time, generative AI technology can help improve the efficiency of public services are worth 4.19 points, that is, more than 80% of the respondents believe that generative AI technology can help improve the efficiency of public services. On the question of whether generative artificial intelligence has an impact on the access of special groups to public services, the average score is 2.607, indicating that it has a greater positive impact. At the same time, as to whether generative artificial intelligence technology will cause fairness problems, the average score of 2.083 is considered to have a greater positive impact. As for whether generative AI technology has an impact on citizens' participation in government decision-making, the average score is 2.375, showing a medium level, which shows that more than half of the respondents believe that AIGC will have a certain impact on citizens' participation. Finally, the average score of 3.792 for the government's widespread adoption of generative artificial intelligence technology in public services is higher, which indicates that respondents have a high support for the government to use AIGC for help in public services.

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Reliability and Validity Testing

KMO and Bartlett's Test		
KMO		0.752
Bartlett's Test of Sphericity	Chi-Square	482.652
	df	15
	p	0.000

Items	Corrected Item-Total Correlation (CITC)	Cronbach α
Would you be willing to use generative AI tools to interact with government agencies， such as self-service or online consultation?	0.505	0.719
Do you think generative artificial intelligence technology can help improve the efficiency of public services?	0.587	
Do you think generative artificial intelligence has an impact on the accessibility of public services for special groups in society (such as the elderly ， people with disabilities)?	0.531	
Do you think generative artificial intelligence technology will cause fairness issues (such as algorithmic bias) in government decision-making?	0.512	
Do you think generative AI technologies have had an impact on opportunities for citizens to participate in government policy making?	0.586	
Do you support the government's widespread adoption of generative AI technology in public services?	0.616	

According to the reliability and validity results, the overall reliability of the questionnaire was measured by Cronbach's Alpha coefficient, and the result was 0.719, which exceeded the commonly accepted reliability standard of 0.7. This indicates that the whole questionnaire has a high internal consistency, that is, the correlation between various questions is strong, and the overall reliability of the questionnaire can be trusted. In addition, the Corrected Item-Total Correlation value of each question is greater than 0.3, indicating that the correlation between each question and the total score is good. No question needs to be deleted, thus further ensuring the reliability of the questionnaire. Second, the validity of the questionnaire was measured by KMO (Kaiser-Meyer-Olkin) and the result was 0.729, exceeding the commonly accepted validity standard of 0.7. This means that there is enough correlation between the variables in the questionnaire to obtain meaningful results in the analysis. In addition, the Chi-Square statistic value was 482.652, the degree of freedom was 15, and the p-value was 0.000, which was lower than the usual significance level of 0.05, indicating that the questionnaire had good validity. This means that the measurement tools in the questionnaire are able to accurately capture the concepts studied, resulting in credible research results.

Based on the above analysis results, it can be determined that the questionnaire used in the study has good reliability and validity.

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Correlation Analysis

Pearson correlation						
	Public awareness of AIGC	The extent to which government policies use AIGC	AIGC's Understanding of Life Help	AIGC Helps Government Develop Policy Understanding	Public Attitude towards AIGC	The enthusiasm of the public to participate in policy formulation
Public awareness of AIGC	1					
The extent to which government policies use AIGC	0.130**	1				
AIGC's Understanding of Life Help	0.232***	0.512***	1			
AIGC Helps Government Develop Policy Understanding	0.195***	0.145**	0.282***	1		
Public Attitude towards AIGC	0.227***	0.130**	0.215***	0.208***	1	
The enthusiasm of the public to participate in policy formulation	0.249***	0.185***	0.272***	0.226***	0.306***	1
*P<0.05 * * p<0.01 * * * p<0.001						

Correlation analysis shows that there is a significant positive correlation between public cognition of AIGC and the extent to which AIGC is used in government policies, how AIGC helps the government to understand life, how AIGC helps the government to develop policy understanding, public attitude towards AIGC and public enthusiasm to participate in policy making.

The existence of these positive correlations suggests that AIGC plays a positive role in promoting public participation in policy making and governance development. Specifically, there is a positive correlation between the degree of public cognition of AIGC and the degree to which AIGC is used for government

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policies, the understanding of AIGC for life, the understanding of AIGC for government policy development, the public attitude towards AIGC and the enthusiasm of public participation in policy formulation. This implies a strong link between higher levels of AIGC awareness and more positive public engagement and attitudes.

This finding has positive implications for governments and organizations, showing that they can drive governance development by increasing awareness of AIGC and actively participating in policy development. Together, these correlation results highlight the critical role of AIGC in promoting public participation and governance, providing a useful reference for future policy and strategy development.

Regression Analysis

Testing the Mediation Effect Model				
	Public Attitude towards AIGC (Model 1)	AIGC's Understanding of Life Help (Model 2)	AIGC Helps Government Develop Policy Understanding (Model 3)	Public Attitude towards AIGC (Model 4)
Constant	1.273 * * * (5.193)	1.849 * * * (8.031)	1.923 * * * (8.301)	0.789 * * (2.894)
Age	0.094 (1.126)	0.190 * (2.412)	0.022 (0.276)	0.070 (0.842)
Your job	-0.049 (-1.180)	0.010 (0.248)	-0.021 (-0.529)	-0.048 (-1.151)
Public awareness of AIGC	0.220 * * * (4.450)	0.202 * * * (4.342)	0.169 * * * (3.608)	0.174 * * * (3.445)
The extent to which government policies use AIGC	0.079 * (2.041)	0.411 * * * (11.321)	0.090 * (2.455)	0.020 (0.457)
AIGC's Understanding of Life Help				0.112 * (2.068)
AIGC Helps Government Develop Policy Understanding				0.144 * * (2.684)
Sample size	400	400	400	400
R 2	0.068	0.301	0.054	0.101
Adjusting R 2	0.058	0.294	0.044	0.087
F-value	F (4395)=7.180, p=0.000	F (4395)=42.484, p=0.000	F (4395)=5.585, p=0.000	F (6393)=7.371, p=0.000
*P<0.05 * * p<0.01 * * * p<0.001				

Summary of Mediation Test Results										
term	Total effect of c	A	B	Mediation effect value of a * b	A * b (Boot SE)	A * b (z-value)	A * b (p-value)	A * b (95% BootCI)	C 'direct effect	Inspection conclusion
Public awareness of AIGC=>AIGC's understanding of life assistance=>Public attitude towards AIGC	0.220***	0.202***	0.112*	0.023	0.012	1.938	0.053	0.001 ~ 0.046	0.174***	Partial intermediary

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Public awareness of AIGC=>AIGC's understanding of helping the government formulate policies=>Public attitude towards AIGC	0.220***	0.169***	0.144**	0.024	0.012	2.078	0.038	0.004 ~ 0.050	0.174***	Partial intermediary
The degree to which government policies use AIGC=>AIGC's understanding of life assistance=>Public attitude towards AIGC	0.079*	0.411***	0.112*	0.046	0.031	1.501	0.133	0.001 ~ 0.120	0.02	Complete Mediation
The degree to which government policies use AIGC=>AIGC's understanding of helping the government formulate policies=>Public attitude towards AIGC	0.079*	0.090*	0.144**	0.013	0.01	1.279	0.201	0.000 ~ 0.040	0.02	Complete Mediation
*P<0.05 * * p<0.01 * * * p<0.001										
Bootstrap type: percentile bootstrap method										

As can be seen from the above diagram, the public's cognitive degree of AIGC directly has an important positive effect on its attitude, and the direct effect is 17.4%the total effect. This means that there is a direct link between the public's cognitive degree and its attitude. In addition, the life of AIGC helps understand and AIGC helps the government's development policy understanding to play a key role in some mediation. They were influenced by 2.3 percent and 2.4% of their attitudes through partial mediation, and they also had a direct effect of 17.4 percent of the common cognition. This shows that the understanding of the AIGC helps to explain the public's attitude in partial mediation. The most important thing is that the government policy USES the degree of AIGC in this study to be fully mediated. This means that the use of AIGC by the government policy has no direct effect on the public attitude, but through AIGC's life help understanding and AIGC helps the government's development policy understanding produce a mediation effect of 4.6% and 1.3% respectively. This emphasizes the impact of government policy on the attitudes of the public to the understanding of AIGC, not directly. In conclusion, the public's attitudes to AIGC are influenced by multiple factors, including public awareness and understanding of AIGC's life help and government policy. The extent to which government policy USES AIGC is also in the public attitude, but this effect is mainly passed through the understanding of AIGC. These findings help to better geographical public attitudes and provide useful information on how to shape the public attitude for political policymakers.

Testing the Mediation Effect Model				
	The enthusiasm of the public to participate in policy formulation	AIGC's Understanding of Life Help	AIGC Helps Government Develop Policy Understanding	The enthusiasm of the public to participate in policy formulation
constant	1.085 * * * (4.240)	1.849 * * * (8.031)	1.923 * * * (8.301)	0.517 (1.824)
Your age	0.222 * (2.540)	0.190 * (2.412)	0.022 (0.276)	0.191 * (2.214)
Your job	-0.049 (-1.130)	0.010 (0.248)	-0.021 (-0.529)	-0.048 (-1.110)

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Public awareness of AIGC	0.264 * * * (5.104)	0.202 * * * (4.342)	0.169 * * * (3.608)	0.208 * * * (3.980)
The extent to which government policies use AIGC	0.123 * * (3.059)	0.411 * * * (11.321)	0.090 * (2.455)	0.050 (1.093)
AIGC's Understanding of Life Help				0.145 * * (2.590)
AIGC Helps Government Develop Policy Understanding				0.156 * * (2.788)
sample size	400	400	400	400
R 2	0.103	0.301	0.054	0.143
Adjusting R 2	0.094	0.294	0.044	0.13
F-value	F (4395)=11.303, p=0.000	F (4395)=42.484, p=0.000	F (4395)=5.585, p=0.000	F (6393)=10.933, p=0.000
*P<0.05 * * p<0.01 * * p<0.001 The t-value in parentheses				

Summary of Mediation Test Results

Term	Total effect of c	A	B	Mediation effect value of a * b	A * b (Boot SE)	A * b (z-value)	A * b (p-value)	A * b (95% BootCI)	C 'direct effect	Inspection conclusion
Public awareness of AIGC=>AIGC's understanding of life assistance=>Public enthusiasm for participating in policy formulation	0.264***	0.202***	0.145**	0.029	0.012	2.41	0.016	0.006 ~ 0.054	0.208***	Partial intermediary
Public awareness of AIGC=>AIGC's understanding of helping the government formulate policies=>Public enthusiasm for participating in policy formulation	0.264***	0.169***	0.156**	0.026	0.012	2.139	0.032	0.004 ~ 0.052	0.208***	Partial intermediary
The degree to which government policies use AIGC=>AIGC's understanding of life assistance=>Public participation in policy formulation	0.123**	0.411***	0.145**	0.06	0.029	2.037	0.042	0.016 ~ 0.131	0.05	Complete Mediation
The degree to which government policies use AIGC=>Understanding of AIGC's assistance in policy formulation=>Public	0.123**	0.090*	0.156**	0.014	0.011	1.247	0.212	0.000 ~ 0.043	0.05	Complete Mediation

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participation in policy formulation										
*P<0.05 * * p<0.01 * * * p<0.001										
Bootstrap type: percentile bootstrap method										

It can be seen from the analysis chart of intermediary variables that the degree of public cognition of AIGC has a direct positive impact on the enthusiasm of AIGC to participate in policy making, and the direct effect accounts for 20.8% of the total effect. This suggests a clear direct link between the level of public awareness of AIGC and its enthusiasm for policy engagement. The life of the AIGC helps to understand plays a key role in some mediating roles. It had a 2.9% effect on public enthusiasm for policy engagement through a partially mediating role, while also having a 17.4% direct impact on public attitudes towards the AIGC. The AIGC's understanding of government policymaking also plays a part in the mediating role. It had a 2.6% effect on public enthusiasm for policy engagement through a partially mediating role, however, public attitudes towards AIGC directly influenced 17.4%. The extent to which government policies use AIGC was found in this study to be completely mediating between enthusiasm for public policy engagement. This means that government policy use of AIGC has no direct effect on public policy engagement enthusiasm, but there is a 6% mediating effect on life help understanding through AIGC. The AIGC also shows a fully mediating role in assisting understanding in policy development. Government policy use of AIGC has no direct effect on public policy participation enthusiasm, but understanding through AIGC's assistance in policy making has a mediating effect of only 1.4% on public policy participation enthusiasm.

In general, there is a complex relationship between the degree of AIGC awareness, the degree of AIGC life help understanding, and the degree of government policy use of AIGC and public policy engagement enthusiasm. The mediating effects of different factors are also different, which indicates the complex interaction of these factors in influencing the enthusiasm of public policy participation.

Conclusion

In conclusion, this empirical study suggests AI as common good can influence public engagement and governance development in the digital age. The result revealed that there is significant positive correlation between public awareness of AIGC and various aspects of its integration into governance processes. The empirical findings revealed that government policy utilization, understanding of life, and public attitudes towards AIGC all have positive correlation with public awareness of AIGC. The mediation results suggested that AIGC public awareness does indeed positively affects public enthusiasm for policy formulation, which is also partially mediated by AIGC's understanding of life assistance. Additionally, it should be noted AIGC has also positively affected enthusiasm therefore getting partially mediated by AIGC's role in helping the government formulate policies. The degree of government policy utilization for AIGC has a positive effect on the public participation in policy formulation thereby getting completely mediated by AIGC's understanding of life assistance. Similarly, government policy utilization of AIGC has shown a positive effect on public participation henceforth getting completely mediated by AIGC's assistance in policy formulation. In general, public enthusiasm for participating in policy formulation has seen direct and mediated effect of AIGC. Public awareness of AIGC directly affects enthusiasm while indirectly affecting through understanding of life. Public awareness and understanding of AIGC's life help and government policy, all these three factors have influenced public attitude towards Ai as common good. Therefore, this study highlights the necessity of having public understanding and trust in AI as common good. Without trust ad public awareness, AI's integration into governance framework might not be as successful as expected. This is crucial that how AI operates, its potential benefits and limitations are well informed. A lack of understanding will lead to acceptance and adoption challenges. Similarly, without trust, resistance against AI driven governance solution needs to be expected. This necessitates that policymakers facilitate a transparent, ethical, and inclusive governance framework that emphasizes on public education, awareness and trust.

The revolutionary development process has led to a paradigm shift in public policy. While the rapid development of science and technology has brought remarkable achievements to mankind, it has also

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brought about a series of challenges. In this era of rapid change, we are faced with many problems: First, virtual reality culture has caused distortions in the concepts of space and time, distorting people's cognition of the real world and the way they interact with each other. Secondly, the digital divide has led to huge inequalities in access and use of new technologies between different regions and social groups, further deepening social divisions. Technological transformation and employment mean that many traditional jobs are replaced by automation, triggering profound changes in the employment structure, work nature and cultural significance. In the field of techno politics, the participation of civil society and the influence of social networks present complexities that challenge the existing political system. At the same time, public interest logical thinking needs to find new norms in the era of globalization to avoid falling into the quagmire of extremism and selfishness. The principles of benevolence and subsidiarity help to build a pluralistic society and create conditions for free and equal citizens. However, in practice, individual freedom and social responsibility need to be balanced. In addition, fairness and justice is also an issue that needs to be solved urgently. We must ensure that everyone has equal opportunities and rights to participate in social life and avoid any form of discrimination.

In order to deal with these challenges, policymakers need to take the following measures: First, strengthen education on virtual reality culture, guide people to correctly view the relationship between the virtual world and real life, and improve the public's digital literacy. Secondly, determine digital inclusion, invest in the development of digital infrastructure, ensure equal access to new technologies around the world, and narrow the digital divide. Provide lifelong learning opportunities for those who are unemployed due to technological transformation, help them adapt to new technologies, develop new skills, and promote employment. At the same time, policymakers should promote political transparency, encourage citizens to actively participate in political decision-making, and protect their right to speak out. Emphasize social responsibility, guide citizens, governments and enterprises to be oriented towards public interests and jointly promote social fairness and harmony. When formulating policies, we need to deeply understand the factors of human growth and freedom, and think about how to truly connect digitalization with people to achieve a more just, inclusive, and harmonious society.

Despite obtaining the result in a comprehensive way, cross-sectional nature of this study limits the generalization potential. Here, a long-term design such as longitudinal study or experimental design would have establish a causal relationship among AIGC awareness, government policy utilization, and public participation in policy development. Moreover, perception and attitude may have cultural influence as well thus generalizing a particular representative sample from one country limits the generatability to other countries or cultural contexts. Future research should be addressing these through a longitudinal study that focuses on cultural aspects as well.

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Abbreviations: EHR, Electronic Health Records; EU, European Union; GDPR, General Data Protection Regulation; HRB, Health Record Bank; ODI, Open Data Institute; PLM, Patients Like Me.