

# Research on the Influencing Factors of Citizen Satisfaction with Digital-Intelligent Governance of County-Level Governments——Mediating Role of Citizen Digital-Intelligent Literacy

Yiyuan Gao

School of College of Public Administration, Shanxi Agricultural University, Shanxi 030801, China

yuangao222@qq.com

**Abstract.** To explore the influencing factors of citizen satisfaction with digital-intelligent governance of county-level governments and address gaps in existing research, this study constructs an analytical framework of "digital-intelligent governance status—citizen digital-intelligent literacy—citizen satisfaction". Combining questionnaire surveys and in-depth interviews, this study collects data from 1,000 valid questionnaires and 60 in-depth interview records covering 20 counties in eastern, central, and western China. SPSS software is used for descriptive statistics and benchmark regression analysis, and the bias-corrected Bootstrap method with the Process plug-in is adopted to test the mediating effect. The results show that digital-intelligent governance policies, practices, and outcomes of county-level governments all exert significant positive impacts on citizen satisfaction. Citizen digital-intelligent literacy plays a significant positive mediating role in the relationships between digital-intelligent governance policies, practices, outcomes and citizen satisfaction. This study enriches the mechanism of how county-level government digital-intelligent governance affects citizen satisfaction, and provides theoretical references and practical foundations for grassroots governments to optimize digital-intelligent governance practices, cultivate citizen digital-intelligent literacy, and improve governance efficiency and citizen satisfaction.

**Keywords:** County-level government, digital-intelligent governance, citizen satisfaction, citizen digital-intelligent literacy.

## 1. Introduction

Against the background of global digital transformation, digital-intelligent governance has become an important foundation for governments worldwide to enhance governance capacity. Digital-intelligent governance started early and has a mature system in foreign countries, focusing on citizen orientation and data sharing, yet it faces problems such as the digital divide and data security. In China, the construction of digital governments has advanced rapidly, and county-level governments have extensively applied digital-intelligent governance technologies to improve governance capacity. However, there are shortcomings including unbalanced urban-rural development, data silos, and overemphasis on construction over user experience. A gap exists between technological investment and citizen satisfaction, and existing studies have not systematically explained the relationship between county-level government digital-intelligent governance and citizen satisfaction. Therefore, based on 1,000 questionnaires from 20 counties in eastern, central, and western China, this study explores the influencing factors of citizen satisfaction with county-level government digital-intelligent governance, fills research gaps, and provides references for improving grassroots governance efficiency and citizen satisfaction.

## 2. Literature Review

### 2.1. Status of Digital-Intelligent Governance

Digital-intelligent transformation of the Chinese government has become a vital part of innovation in the governance system and governance capacity, with big data playing a key role[1]. At present,

digital-intelligent technologies are increasingly applied in government governance, promoting the integration of big data and government governance, accelerating the digital and intelligent transformation of governments, and advancing the modernization of national governance. Since the 20th National Congress of the Communist Party of China, technologies such as the Internet, big data, and artificial intelligence have been continuously improved, administrative governance capacity has been significantly enhanced, and the construction of digital society and digital government has been effectively promoted[2]. The digital and intelligent level of public services and social governance has been notably raised. Government governance has entered the digital era, and further promoting intelligent governance is an inevitable trend in the evolution of government governance forms[3].

## **2.2. Problems in Digital-Intelligent Governance**

Multiple problems exist in current digital-intelligent governance. First, grassroots digital-intelligent governance is plagued by the "hierarchical gap in technological implementation"[4], which may further deteriorate into digital burden[5]. Finer-grained data mining leads to more frequent infringements against critical security thresholds[6]. Second, the integration of data resources is hindered by disjointed development of databases, operating systems, application software and user interfaces across disparate administrative departments. The absence of unified technical criteria gives rise to information silos: governmental departments are deficient in refined data analytics capacities[7], alongside the predominant penetration of algorithmic logic into administrative operation systems[8]. Third, substantial resource waste exists in the construction of digital-intelligent infrastructure, featured by redundant investment among varied authorities and administrative tiers, with recurring duplicated construction particularly conspicuous in certain regions[9], thereby inflicting irreversible repercussions on national strategic security and social stability[10].

## **2.3. Countermeasures for Digital-Intelligent Governance**

In terms of countermeasures for digital-intelligent governance, first, the digital literacy of grassroots civil servants should be improved. Government departments should strengthen training for grassroots civil servants, enhance their ability to proficiently use digital-intelligent tools, and improve the scientific and professional level of management and decision-making[11], while providing sound policy and financial support for digital-intelligent governance[12]. Second, multi-stakeholder collaboration should be promoted to build a resilient digital-intelligent organizational system. Break down bureaucratic division barriers, strengthen internal government coordination, encourage orderly public participation, clarify departmental powers and responsibilities, conduct overall coordination, and establish cross-regional collaboration mechanisms. Third, digital-intelligent platforms should be built to advance digital-intelligent infrastructure construction. Promote the in-depth integration of digital-intelligent technologies and government services, build a shared digital-intelligent service platform, and improve digital-intelligent infrastructure. Construct a new digital-intelligent supervision system that fully reflects public opinion[13], and develop application scenarios of digital-intelligent technologies for cross-border collaboration in government organizations[9].

# **3. Research Design**

## **3.1. Data Sources**

The survey subjects are citizens aged 18 and above in target counties, covering urban and rural areas and groups with different occupations, ages, and educational backgrounds to ensure sample representativeness. A combination of online and offline distribution is adopted: online distribution via community groups and Questionnaire Star, and offline distribution at government service centers, communities, and village committees. Questionnaire verification is set to eliminate invalid questionnaires and ensure samples meet empirical analysis requirements. This study takes Chinese county-level governments as examples, randomly selecting 6–7 counties from eastern, central, and

western China, totaling 20 counties. Fifty valid questionnaires are collected from each county, resulting in 1,000 valid questionnaires from 20 counties.

Field research is conducted on the status of county-level government digital-intelligent governance, with interviews with county-level government staff, village cadres, villagers, social workers and other subjects to provide empirical materials for the study. In total, 60 interviewees are selected, including 15 from county-level departments, 15 from town and sub-district staff, 10 from enterprises and social organizations, 10 from village and community cadres, and 10 from villagers. One-on-one on-site interviews are conducted, with each interview lasting about 30 minutes, and follow-up supplements via telephone, WeChat and other tools.

### 3.2. Variable Setting

Academic research on county-level government digital-intelligent governance is limited, and a unified variable classification system and measurement dimensions adapted to county-level scenarios have not been formed, making academic achievements difficult to directly correspond to the core topic of this study. Therefore, variables in this study are mainly summarized and refined from questionnaire surveys of 20 counties and 60 in-depth interview results.

Based on interview content analysis, independent variables are digital-intelligent governance policies, digital-intelligent governance practices, and digital-intelligent governance outcomes; the dependent variable is citizen satisfaction; and the mediating variable is citizen digital-intelligent literacy. The model structure is shown in Figure 1.

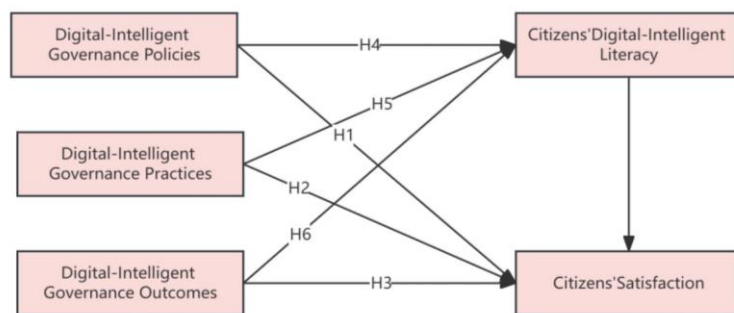


Figure 1. Model Structure Diagram

## 4. Research Hypotheses

In formulating research hypotheses, existing studies on citizen satisfaction with county-level government digital-intelligent governance are relatively limited, and current theoretical frameworks and empirical conclusions are insufficient to directly support hypothesis construction. Therefore, based on a thorough review of existing literature, this study takes interview data and practical cases obtained from field research as the main basis for hypothesis development.

Digital-intelligent governance policies are an important factor affecting citizen satisfaction with digital-intelligent governance. Surveys show that rural residents no longer need to go to government agencies to pay endowment insurance, as relevant national policies allow direct payment via mobile phones (interview number: W15). Relevant enterprises note that enterprise business license registration no longer requires offline processing; online transfer of application materials simplifies processes and improves satisfaction (interview number: M01). Some villagers mention that ID card replacement can be done by submitting materials through the "Public Security One-Network Office" platform without going to the police station, calling the policy very thoughtful (interview number: M02). In terms of digital medical insurance, the cross-provincial medical insurance settlement policy realizes "more data running and less people trouble", enabling direct settlement of cross-provincial medical treatment without returning to the registered residence for reimbursement, greatly facilitating people's lives and bringing high satisfaction (interview number: M03). Thus, better digital-intelligent governance policies lead to higher citizen satisfaction. Hypotheses are proposed as follows:

H1: Digital-intelligent governance policies have a positive impact on citizen satisfaction.

County-level governments proactively disclose government data, decision-making processes, service procedures and other information in digital-intelligent governance practices, enabling the public to understand and supervise government work. This continuously consolidates the trust foundation of social stakeholders in smart government construction, stimulates their participation enthusiasm and initiative in co-construction and sharing, and significantly improves citizen satisfaction. The principle of "reducing materials, links, time and times" is implemented for citizen service processes. Through systematic sorting and intelligent analysis, digital-intelligent technologies are used to reconstruct multiple matters into "one thing", providing citizens with package-style and theme-based integrated services. Scenarios for "one thing, one-time handling" of livelihood services are enriched, promoting the transformation of government services from "available" and "easy to handle" to "intelligently handled", and increasing public satisfaction[10]. Hypothesis is proposed as follows:

H2: Digital-intelligent governance practices have a positive impact on citizen satisfaction.

While ensuring an adequate supply of digital-intelligent public goods and government services, county-level governments strive to enhance the sense of participation and gain of vulnerable groups in government reforms. User interfaces are optimized, targeted training services are provided, and convenient feedback mechanisms are established. Favorable digital-intelligent governance outcomes make citizens feel the warmth of government services[14]. Digital-intelligent transformation realizes the synchronization of online and offline services, allowing citizens to enjoy the results of digital-intelligent governance[15]. Surveys show that after the "Maximum One Visit" reform at county-level governments, enterprise registration time has been shortened from 15 days to 1 day, and digital-intelligent governance outcomes have significantly improved the business environment and greatly increased public satisfaction. Some people note that big data accurately identifies subsistence allowance recipients, avoiding "wrong subsidies" and "omitted subsidies", and digital-intelligent governance makes social assistance fairer, winning wide praise (interview number: M04). Hypothesis is proposed as follows:

H3: Digital-intelligent governance outcomes have a positive impact on citizen satisfaction.

Regarding digital-intelligent policies, interviews revealed that following community outreach campaigns on the "Smart Elderly Care" policy, residents learned that smart wristbands can monitor health data and link to emergency services. They voluntarily applied for the devices on behalf of their parents and regarded the policy as user-centric (interview number: M5). A public-private finance officer noted, "After learning about the 'e-invoice' policy, I mastered its usage through the tax authority's operational guidelines, which streamlined reimbursement and significantly improved my satisfaction with tax services" (interview number: M6). Additionally, a respondent stated, "I follow the 'Digital Government' WeChat official account to keep abreast of the integrated 'One Network for Unified Governance' policy. When I reported neighborhood noise issues, I witnessed the platform's rapid dispatching and processing, which further enhanced my trust in the policy" (interview number: M7).

Regarding digital-intelligent practices, interviewees commented as follows: "I frequently use government service mobile applications and am familiar with their operational procedures. Consequently, I can smoothly reserve parking spaces and check traffic conditions via the 'Smart Transportation' platform. I find digital-intelligent governance practices highly efficient and express strong satisfaction" (interview number: M8). An elderly respondent remarked, "Community grid workers taught me to use the 'Smart Elderly Care' platform to book meal delivery and in-home care services. After mastering the operations, I believe these practical services have effectively resolved my daily difficulties, leading to a highly positive evaluation of governance practices" (interview number: M9). Concerning the application of electronic credentials, another interviewee stated: "I follow government-affiliated short-video accounts and learned to use 'electronic credentials' for hotel check-in and high-speed rail ticketing through tutorials. My experience with these services has

highlighted the convenience of digital-intelligent practices, resulting in high recognition of such services" (interview number: M10).

Diverse publicity modalities have enhanced the public's capacity for digital-intelligent living. Establishing multi-channel platforms for public participation in digital-intelligent development strengthens the public's ability to discern information in the digital era. One respondent opined, "Through news media, I learned that 'Digital Rural' development has enabled agricultural products to be sold nationwide via e-commerce. As my digital literacy improved, I recognized this as an outcome of digital-intelligent governance through the coordination of big data and logistics systems, thereby increasing my satisfaction with the governance effectiveness of rural revitalization" (interview number: M11). Another commented, "Community outreach campaigns have elevated my digital literacy. I learned that the community's intelligent waste sorting system optimizes collection routes and improves environmental efficiency through data analysis, resulting in more timely waste removal. This has led me to genuinely acknowledge the significance of digital-intelligent governance outcomes" (interview number: M12). Accordingly, this study proposes the following hypotheses:

H4: Citizen digital-intelligent literacy plays a positive mediating role in the relationship between digital-intelligent governance policies and citizen satisfaction.

H5: Citizen digital-intelligent literacy plays a positive mediating role in the relationship between digital-intelligent governance practices and citizen satisfaction.

H6: Citizen digital-intelligent literacy plays a positive mediating role in the relationship between digital-intelligent governance outcomes and citizen satisfaction.

## 5. Empirical Analysis

### 5.1. Descriptive Statistics

**Table 1.** Descriptive Statistics Results

Variable	Category	Frequency	Percentage
Gender	Male	496	49.6%
	Female	504	50.4%
Age	16-20	105	10.5%
	21-25	154	15.4%
	26-30	167	16.7%
	31-35	132	13.2%
	36-40	171	17.1%
	41-45	143	14.3%
	46 and above	128	12.8%
Education	Junior high school or below	124	12.4%
	Senior high school or technical secondary school	209	20.9%
	Junior college or vocational college	213	21.3%
	Bachelor's degree	247	24.7%
	Master's degree or above	207	20.7%
Occupation	Managerial staff	149	14.9%
	Technical personnel (including programmers)	168	16.8%
	Production or sales personnel (including e-commerce sales)	132	13.2%
	Courier, food delivery, driver, intermediary, hairdresser, housekeeper, property management staff	157	15.7%
	Secretarial, printing, hotel, catering or entertainment service personnel	142	14.2%
	Editor, journalist, streamer, actor, teacher.		
	doctor, nurse, accountant, lawyer and other professionals	153	15.3%
	Freelancer or individual business owner	99	9.9%
Others			

As shown in Table 1, the questionnaire results indicate that males account for 49.6% and females 50.4%, with a balanced gender ratio. Age distribution: 16–20 years old (10.5%), 21–25 years old

(15.4%), 26–30 years old (16.7%), 31–35 years old (13.2%), 36–40 years old (17.1%), 41–45 years old (14.3%), and 46 years old and above (12.8%), with a relatively balanced age distribution. Educational background: junior high school and below (12.4%), senior high school or technical secondary school (20.9%), junior college or higher vocational college (21.3%), bachelor’s degree (24.7%), and master’s degree and above (20.7%). Occupations cover all sectors, with a balanced sample distribution.

## 5.2. Benchmark Regression Analysis

As shown in Table 2, all correlations among independent variables (digital-intelligent governance policies, practices, outcomes), mediating variable (citizen digital-intelligent literacy), and dependent variable (citizen satisfaction) are significant, allowing for further analysis.

**Table 2.** Correlation Analysis Between Main Variables

Variable	Digital-Intelligent Governance Policies	Digital-Intelligent Governance Practices	Digital-Intelligent Governance Outcomes	Citizens' Digital-Intelligent Literacy	Citizens' Satisfaction
Digital-Intelligent Governance Policies	1				
Digital-Intelligent Governance Practices	.200**	1			
Digital-Intelligent Governance Outcomes	.343**	.558**	1		
Citizens' Digital-Intelligent Literacy	.384**	.370**	.514**	1	
Citizens' Satisfaction	.151**	.329**	.155**	.363**	1

\*\*The correlation is significant at the 0.01 level (two-tailed).

## 5.3. Hypothesis Testing

### 5.3.1. Main Effect Testing

**Table 3.** Multiple Linear Regression Analysis

Variable	Unstandardized coefficient		Standardized coefficient	t	Significance	Collinearity statistics		The adjusted R <sup>2</sup>
	B	Standard error	Beta			Tolerance	VIF	
(Constant)	0.428	0.16		2.674	0.008			0.399
Digital governance policies	0.296	0.032	0.308	9.248	0	0.976	1.025	
Digital Governance Practice	0.217	0.036	0.212	6.09	0	0.891	1.122	
Digital governance outcomes	0.383	0.034	0.396	11.238	0	0.873	1.145	

This study uses SPSS to conduct multiple linear regression analysis on the data, with results shown in Table 3. Digital-intelligent governance policies, practices, and outcomes all exert significant positive impacts on citizen satisfaction. The adjusted R<sup>2</sup> is 0.399, indicating the model has good explanatory power (39.9%).

Among the three dimensions of digital-intelligent governance, outcomes have the most prominent impact, suggesting that the quality of digital-intelligent governance outcomes critically shapes citizen satisfaction. Policies and practices also play important roles despite weaker effects than outcomes.

Policies influence satisfaction through top-level design, while practices affect satisfaction through policy implementation.

Collinearity diagnostics show that all independent variables have VIF values close to 1 (maximum 1.15), far below the critical threshold of 10, confirming no multicollinearity in the model and independent explanatory power of core variables on the dependent variable.

### 5.3.2. Mediating Effect Testing

This study adopts the bias-corrected Bootstrap method with the Process plug-in to test the mediating effect of citizen digital-intelligent literacy. A significant mediating effect is confirmed if the coefficient of the mediating variable is significant and the confidence interval does not include 0. The confidence level is set to 95%, and results reveal significant heterogeneity across different action paths.

**Table 4.** Test of the Mediating Effect of Behavioral Patterns

Independent variable	Behavior pattern	Effect size	se	LLCI	ULCI	effect size
Digital and intelligent governance policies	Total effect	0.368	0.0376	0.2942	0.4418	
	Direct effect	0.3257	0.0361	0.2547	0.3967	89%
	Mediating effect	0.0423	0.0136	0.0182	0.0709	11%
Digital and intelligent governance practices	Total effect	0.3709	0.0404	0.2916	0.4502	
	Direct effect	0.3133	0.0394	0.236	0.3907	84%
	Mediating effect	0.0575	0.0139	0.0316	0.0858	16%
Outcomes of digital and intelligent governance	Total effect	0.4975	0.0352	0.4283	0.5667	
	Direct effect	0.4341	0.0378	0.3599	0.5083	87%
	Mediating effect	0.0634	0.0173	0.0314	0.0992	15%

This study employed the Process macro to examine the mediating effect of citizens' digital intelligence literacy on the collected data, yielding the results presented in Table 4 above. According to the analysis in Table 4, the impacts of digital intelligence governance policy, digital intelligence governance practice, and digital intelligence governance outcome on citizen satisfaction are dominated by direct effects, with relatively weak mediating effects. Nevertheless, the mediating effects are statistically significant at the  $*p* < 0.05$  level, indicating that the mediating role exists.

## 6. Research Conclusions

This study finds (see Table 5 for details) that the direct effect of digital-intelligent governance policies on citizens' satisfaction is significant, so H1 is supported, indicating that the top-level design and policy supply of digital-intelligent governance can directly enhance citizens' satisfaction with digital governance. The direct effect of digital-intelligent governance practices on citizens' satisfaction is significant, so H2 is supported, indicating that the implementation and experience optimization of digital government services can directly improve citizens' satisfaction. The direct effect of digital-intelligent governance outcomes on citizens' satisfaction is significant, so H3 is supported, indicating that the effectiveness of digital-intelligent governance in improving governance efficiency and solving governance problems can directly enhance citizens' satisfaction.

In addition, citizens' digital-intelligent literacy plays a mediating role between digital-intelligent governance policies and citizens' satisfaction, so H4 is supported, indicating that the implementation and promotion of digital-intelligent governance policies can improve citizens' digital cognition, thereby enhancing citizens' satisfaction. Citizens' digital-intelligent literacy plays a mediating role between digital-intelligent governance practices and citizens' satisfaction, so H5 is supported, indicating that the use and experience of digital government services can improve citizens' digital skills and participation ability, thereby enhancing citizens' satisfaction. Citizens' digital-intelligent literacy plays a mediating role between digital-intelligent governance outcomes and citizens' satisfaction, so H6 is supported, indicating that the perception of the effectiveness and achievements

of digital-intelligent governance can improve citizens' ability to interpret and evaluate digital information, thereby enhancing citizens' satisfaction.

**Table 5.** Summary of Research Hypothesis Testing Results

Research Hypothesis	Hypothesis Content	Supported or Not
H1	Digital-intelligent governance policies have a positive impact on citizens' satisfaction	Supported
H2	Digital-intelligent governance practices have a positive impact on citizens' satisfaction	Supported
H3	Digital-intelligent governance outcomes have a positive impact on citizens' satisfaction	Supported
H4	Citizens' digital-intelligent literacy plays a positive mediating role between digital-intelligent governance policies and citizens' satisfaction	Supported
H5	Citizens' digital-intelligent literacy plays a positive mediating role between digital-intelligent governance practices and citizens' satisfaction	Supported
H6	Citizens' digital-intelligent literacy plays a positive mediating role between digital-intelligent governance outcomes and citizens' satisfaction	Supported

## 7. Policy Recommendations

Formulate scientific, improved and people's livelihood-oriented digital-intelligent governance policies, and continuously optimize policy supply to promote the improvement of citizens' satisfaction. Optimize the development of digital-intelligent governance practices, advance convenient, efficient and comprehensive digital-intelligent governance practices, and continuously improve service experience to promote the improvement of citizens' satisfaction. Improve the quality of digital-intelligent governance outcomes, create remarkable and public-recognized digital-intelligent governance outcomes, effectively enhance citizens' sense of gain and happiness, so as to promote the improvement of citizens' satisfaction. Attach importance to the cultivation of citizens' digital-intelligent literacy, improve citizens' digital ability through diversified training, and give full play to its positive mediating role in the impact of digital-intelligent governance policies on citizens' satisfaction. Strengthen the improvement of citizens' digital-intelligent literacy, help citizens proficiently use digital government services, and effectively exert its positive mediating role in the impact of digital-intelligent governance practices on citizens' satisfaction. Promote the development of citizens' digital-intelligent literacy, enhance citizens' ability to perceive and evaluate governance achievements, and actively play its positive mediating role in the impact of digital-intelligent governance outcomes on citizens' satisfaction.

## References

- [1] Zhao H M, Fu Y H. Discussion on the main problems in the integration and sharing of government information resources under the background of big data[J]. Library and Information Service Tribune, 2021, 6(08):25-32.
- [2] Yao Y F, Hu F, Xu Z Z. What drives the digital-intelligent transformation of the government: A mixed study based on factor characterization and antecedent configuration[J]. Science and Management, 2025, 45(02):50-59.
- [3] He Y J. A basic study on the credible development of data under the background of government digital-intelligent transformation: An analysis based on the embedding of generative artificial intelligence[C]. Shanghai: Collected Essays on Emerging Rights, Vol.1, 2024 - Academic Community Research Essays on Smart Rule of Law, 2024.

- [4] Yang B. The hierarchical gap in technological implementation: An explanation for the performance loss of local digital government construction[J]. *Chinese Public Administration*, 2024, 40(03):151-160.
- [5] Sun Z F, Cong K L. How does digital empowerment evolve into a grassroots digital burden? An integrated analytical framework[J]. *Administrative Tribune*, 2024, 31(02):135-145.
- [6] Xu L, Jiang C, Wang J, et al. Information security in big data: privacy and data mining[J]. *IEEE Access*, 2014, 2:1149-1176.
- [7] Li C. Research report on the "digital-intelligent" transformation of Fuxin municipal government driven by big data[J]. *International Public Relations*, 2023(16):72-74.
- [8] Zhang X S. Reconstructing the subjective identity of artificial intelligence in the AI era: from instrumental rationality to ethical entity[J]. *Humanities and Social Science Research*, 2025, 8(3):44.
- [9] Wu Y. An analysis of digital-intelligent technology empowering government governance efficiency[J]. *Theoretical Horizon*, 2023(10):44-49.
- [10] Beretas D C P. How data poisoning compromises AI models[J]. *ISR Journal of Arts, Humanities and Social Sciences*, 2025, 1(4):163-166.
- [11] Zhang X, Zhang L X. The generative logic, practical explanation and efficiency improvement of intelligent governance[J]. *Journal of Hohai University (Philosophy and Social Sciences Edition)*, 2023, 25(06):36-45.
- [12] Nielsvan Steenpaal. Crossing Boundaries in Tokugawa Society: Suzuki Bokushi, A Rural Elite Commoner by Takeshi Moriyama (review)[J]. *Monumenta Nipponica*, 2015, 70(01):159-163.
- [13] Burak Erkut. From Digital Government to Digital Governance: Are We There Yet?[J]. *Sustainability*, 2020, 12(03):860.
- [14] Yu X S, Tan H, Yang Y Q. The motivation, logic and path of smart government construction from the perspective of digital-intelligent governance[J]. *Journal of North China University of Science and Technology (Social Science Edition)*, 2024, 24(03):51-56.
- [15] Yang X T. From collaborative digitalization to digital-intelligent collaboration: A study on the transformation of local government governance models[D]. Nanning: Guangxi University, 2025.