The Crisis of Perceived Legitimacy of pre-service officials in AI Bureaucracy for Value-rationality

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Abstract: - This study empirically investigates the impact of AI bureaucracy's instrumental traits on the value-rational expectations of pre-service public officials. While AI maximizes efficiency through technical consistency, its mechanical impersonality risks triggering a crisis of perceived legitimacy and psychological alienation. A survey of 169 undergraduate students majoring in Public Administration revealed that perceptions of AI's impersonality (Mean=3.80) significantly exceed those of its consistency (Mean=3.10). Regression analysis identified mechanical impersonality as the primary driver of the demand for public communication (β=.512, ρ<.001), While Instrumental Consistency t notably increased the need for Ethical Accountability (β=.428, ρ<.001). Building on the framework of digital inclusion proposed by Song (2022), this research argues that AI-driven alienation necessitates a transition from instrumental efficiency to a Hybrid Governance Model. The findings suggest that administrative legitimacy in the digital era depends on anchoring AI in value rationality, prioritizing transparency and human-centric accountability over mere technical optimization.

Key-Words: - AI Bureaucracy, Perceived Legitimacy, Psychological Alienation, Mechanical Impersonality, Value Rationality, digital inclusion

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1 Introduction

The integration of AI into public administration is often heralded as a pinnacle of instrumental rationality, promising unprecedented efficiency and consistency. However, as AI transitions from a supportive tool to an autonomous "digital bureaucrat," it introduces a profound crisis of perceived legitimacy and psychological alienation between the state and its citizens. While traditional bureaucracy was grounded in human interaction, the emergence of Algorithmic Bureaucracy risks transforming administrative services into a black box, where mechanical impersonality replaces empathetic governance. Recent empirical data suggests a grave concern among future administrative experts regarding this shift. Notably, 87.5% of pre-service officials express deep apprehension that AI intervention will stifle civic participation , while a similarly overwhelming majority (77.0%) warns that AI-driven administration will exacerbate the service gap for digitally vulnerable populations. These findings indicate that the coldness of AI—its perceived lack of empathy and contextual understanding—is not merely a technical limitation but a catalyst for administrative alienation. When citizens perceive administrative dispositions as impersonal and rigid, the qualitative connection between the government and the public is severed. This study shifts the focus from simple technology acceptance to the broader impact of AI on Government's Perceived Legitimacy. It posits that as AI maximizes instrumental consistency, it simultaneously heightens the sense of "mechanical impersonality," leading to a perceived decline in the quality of public services. For the digitally marginalized, this shift transcends mere inconvenience; it represents a systemic exclusion that undermines the democratic foundation of the state. Therefore, the purpose of this research is to empirically analyze how the bureaucratic characteristics of AI trigger a normative demand for value-rational safeguards—specifically through reinforced public communication and ethical accountability. By exploring the perceptions of 169 pre-service public officials , this study warns that a "cruel optimization" prioritizing speed over human values may lead to an Iron Cage of AI, eventually eroding public trust and the democratic legitimacy of administrative institutions.

2 Theoretical Background

2.1. The Evolution of Bureaucracy: Weberian Bureaucracy and the Rise of AI Algocracy

The transition toward AI-driven administration represents the ultimate manifestation of Max Weber's ideal-type bureaucracy, yet it simultaneously threatens to push its inherent pathologies to a point of systemic crisis. At the heart of Weberian theory is the concept of Instrumental Rationality (Zweckrationalität), which prioritizes the most efficient means to achieve a predefined technical end. In a traditional Weberian framework, this is achieved through a rigid hierarchy, specialized division of labor, and, most crucially, the application of calculable rules without regard for persons. AI bureaucracy serves as the digital zenith of this logic, replacing human discretion with algorithmic certainty and ensuring a level of Instrumental Consistency that no human bureaucrat could maintain[1]. However, Weber famously warned of the Digital Iron Cage—a state where the drive for technical optimization traps the human spirit in a cold, mechanized system of control. This cage is constructed from what this study terms Mechanical Impersonality. While Weber viewed impersonality as a virtue that prevents nepotism and subjective bias, in the era of AI, this trait evolves into a source of Psychological Alienation[2]. When citizens interact with an algorithm that lacks the capacity for empathy or contextual interpretation, the administrative encounter is stripped of its human face. The state, once a responsive entity, is perceived as a detached machine, leading to a profound sense of exclusion among those who cannot navigate its coded logic.

This shift creates a fundamental tension between instrumental efficiency and Value Rationality (Wertrationalität). Value rationality demands that administrative actions be judged not just by their speed or consistency, but by their alignment with ethical principles, transparency, and democratic accountability. As AI systems become more opaque—often referred to as the black box of algocracy—the Perceived Legitimacy of the state begins to erode[3]. Algocracy is a system of governance where social and administrative decision-making is shifted from human bureaucrats to algorithms and data-driven systems.it represents the digital evolution of Weber's iron cage, prioritizing instrumental rationality and technical efficiency over human discretion. In an algocracy, the black-box nature of code often results in structural opacity, making it difficult for citizens to understand or contest decisions[3]. This leads to mechanical impersonality, where the lack of empathy and contextual flexibility triggers psychological alienation. Ultimately, algocracy threatens administrative legitimacy by replacing communicative transparency with opaque, automated authority, disproportionately marginalizing those within the 3rd information divide[4].

Citizens do not merely seek a correct output, they demand Communicative Rationality, where the reasoning behind a decision is explainable and open to discourse. Consequently, the coldness of AI-driven impersonality triggers a compensatory demand for democratic safeguards. The more an administrative system operates with rigid, mechanical consistency, the more strongly pre-service officials and the public alike demand Ethical Accountability. Without anchoring these instrumental systems in value-rational frameworks, the move toward automated governance risks fulfilling Weber's darkest prophecy, a world of specialists without spirit and sensualists without heart, where the efficiency of the machine ultimately silences the normative essence of the public interest.

2.2 Mechanical Impersonality and Psychological Alienation

A core dimension of AI bureaucracy is Mechanical Impersonality. Unlike human bureaucrats, AI operates through a human-absent logic, lacking discretionary empathy.

- Psychological Alienation: For citizens on the wrong side of the digital divide, the black-box nature of AI is not just a technical hurdle but a source of profound psychological alienation. When a vulnerable citizen is denied a benefit or service by an emotionless algorithm without the possibility of human-mediated explanation, the administrative process is perceived as a cruel optimization.. When citizens are subjected to standardized algorithmic outcomes that ignore unique individual contexts, a sense of administrative alienation occurs.
- Mechanical Impersonality **:**Building on the premise that AI is often perceived as cold or detached, this study argues that such impersonality acts as a structural barrier. This distances the state from its citizens, transforming the government from a responsive public servant into an unreachable machine. This study posits that the digital divide amplifies the perceived coldness of AI. As the state automates its empathy through rigid code, digitally marginalized populations experience a double exclusion, first from the technology itself, and second from the democratic right to be heard and understood by their government.

2.3 Digital Inclusion and the Crisis of Perceived Legitimacy

Administrative legitimacy relies on the public's belief that the government's exercise of power is fair and inclusive. The digital divide is no longer merely a matter of access to hardware; it has evolved into a divide of communicative agency within the automated state. As public administration shifts toward AI-driven interfaces, the inability to navigate these systems creates a new form of systemic exclusion. According to Song (2022), the implementation of automated public services, such as voice-based chatbots, must be evaluated through the lens of digital inclusion. Without proactive measures to ensure accessibility for all demographic groups, the transition to AI bureaucracy risks disenfranchising those who lack the technological literacy to interact with algorithmic systems, thereby undermining the normative duty of universal service.

- The Transparency and Access Gap: If AI systems—including voice-based interfaces—are implemented without considering the communicative readiness of diverse users, they may exacerbate the digital divide.
- As shown in current data, 77.0% of respondents fear that AI bureaucracy will marginalize digitally vulnerable populations. When technology acts as a barrier rather than a bridge, the Perceived Legitimacy of the administration is undermined, as the state fails its normative duty of universal service and equitable communication[4].

2.4 Value-Rational Expectations and Communicative Rationality

In response to the limitations of instrumental efficiency, there is a rising demand for Value Rationality (Wertrationalität). This involves a shift toward Communicative Rationality, where the goal of administration is not just the speed of processing, but the quality of the interaction and the right to explanation. To mitigate AI-driven alienation, the administration must transition from instrumental efficiency to Communicative Rationality. Building on the findings of Song (2022), which highlights the role of public communication in fostering digital inclusion, this research argues that AI bureaucracy requires a human-centric communication layer. The demand for high levels of Public Communication (β=.512) and Ethical Accountability (β=.428) in our data reflects a normative counter-movement(see table 3). Citizens—especially those vulnerable to digital exclusion—do not just seek faster services; they demand a system that is explainable and accountable, ensuring that technology serves as a bridge for inclusion rather than a wall of alienation.

- The Demand for Human-Centric Governance: Following the findings of Song (2022) regarding the importance of public communication in digital transitions, this study argues that AI bureaucracy must be anchored in ethical accountability[4].
- The high correlation between mechanical impersonality and the demand for public communication (β=.512) suggests that the more inhuman a system feels, the more citizens crave democratic engagement and human oversight to restore trust in the digital administrative state.

3 Research Methodology and Analysis of Results

3.1 Research Design and Analytical Methods

This study adopts a systematic quantitative research design to empirically explore the nexus between the bureaucratic attributes of Artificial Intelligence (AI) and the normative demands for value-rational governance. Given the nascent stage of AI integration in the public sector, a descriptive-causal hybrid approach was selected to first delineate the current perception trends among future administrative elites and subsequently analyze the causal mechanisms that trigger public value expectations. The research design is fundamentally grounded in Weberian bureaucratic theory, specifically focusing on the tension between Zweckrationalität (Instrumental Rationality) and Wertrationalität (Value Rationality). By utilizing a structured survey instrument, this study seeks to quantify how the perceived mechanical nature of AI influences the human-centric expectations of public officials. This quantitative framework provides the statistical rigor necessary to generalize the psychological and normative reactions of pre-service officials to the increasing automation of administrative discretion. The target population for this study consists of 169 undergraduate students majoring in Public Administration in University, South Korea(see Table 1). This purposive sampling strategy was employed based on the rationale that these individuals are pre-service public officials who possess the theoretical foundation required to evaluate administrative changes through a professional lens. Unlike the general public, this group understands the inherent trade-offs between efficiency and equity, making their perceptions critical for predicting future organizational shifts. To empirically test the research model, the variables were operationalized into distinct measurable constructs. All items were measured on a

5-point Likert scale (ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree")(see appendix 1).

Table 1. Demographic Characteristics and AI Usage Status of Respondents (N=169)

Category	Sub-category	Frequency(n)	Percentage(%)
Grade	Sophomore (2ND Year)	75	44.4
	Junior(3RD Year)	54	32.0
	Senior(4TH Year)	20	23.6
Interest in AI	Very High	35	20.8
	High	42	25.0
	Moderate	77	45.8
	Low / Very Low	15	8.4
Purpose of AI Use*	Data Collection & Analysis	80	47.4
	Academic Study & Writing	62	36.8
	Everyday Information Search	27	15.8
Frequency of AI Use	Daily	11	6.3
	2–3 times per week	49	29.1
	Once per week	60	35.4
	Less than once a month / Never	49	29.1

*Note: Multiple responses were allowed for the purpose of AI use. Percentages may not total 100% due to rounding.

3.2 Independent Variables (Instrumental- Rational Expectation: Perceived AI Bureaucracy)

These construct measures the degree to which AI is perceived to follow a rigid, predictable, and rule-based logic. As shown in Table 2, this variable achieved a Mean of 3.10 (SD=0.91) with a Cronbach's α of .765, indicating reliable internal consistency.

V1. Instrumental Consistency: Defined (appendix 1-item 2) as the degree to which AI adheres to rigid, rule-based algorithms, ensuring predictability and error-free execution (Mean=3.10, SD=0.91, α =.765). This represents the "digitalization" of Weber's rule-following ideal.

V2. Mechanical Impersonality: This dimension(appendix 1-item 3) captures the "human-absent" nature of AI, focusing on its perceived lack of empathy and contextual flexibility. This variable recorded a higher Mean of 3.80 (SD=0.86, α =.824), suggesting that pre-service officials are highly sensitive to the cold nature of algorithmic processing.

3.3 Dependent Variables (Value-Rational Expectations):

V3. Ethical Accountability: Measures(appendix 1-item 4) the normative expectation that final moral and legal responsibility must remain with human officials. This is a value-rational check against the de-responsibilization of algorithms. This reflects the normative demand for human-centric responsibility and Human-in-the-Loop oversight (Mean=4.15, SD=0.76, α =.748).

V4. Public Communication: Rooted in the **communicative rationality** framework and the findings of **Song (2022)**, this construct measures(appendix 1-item 5) the demand for transparency and civic engagement in AI-driven decision-making (Mean=4.22, SD=0.81, α=.703). To ensure the robustness of the comparative analysis, internal consistency was verified using Cronbach's α. As detailed in Table 7, all constructs exceeded the 0.70 threshold. A significant finding in the descriptive data is that the mean scores for the Value-Rational dimensions (4.15-4.22) are substantially higher than those for the Instrumental dimensions (3.10-3.80). This empirical gap suggests that pre-service officials prioritize the preservation of public values over the technical consistency of AI systems. Used to delineate the baseline perceptions of AI's bureaucratic traits.

- **Correlation Analysis:** Performed to explore the inter-variable relationships. The significant positive correlation between **Mechanical Impersonality and Public Communication (r=.458, p<.01)** supports the hypothesis that the colder the AI feels, the higher the demand for human-centric communication.
- **Multiple Regression Analysis:** This was the primary method used to determine the relative predictive power of instrumental traits on value-rational expectations. By integrating the perspectives on **digital inclusion[4]**, the regression models identify the specific bureaucratic triggers—such as impersonality—that necessitate a **Hybrid Governance Model** to restore administrative legitimacy.

Table 2. Correlation Matrix and Reliability Results

Variables	1	2	3	4	Mean	SD	α

Instrumental Consistency	1				3.10	0.91	.765
Mechanical Impersonality	.342*	1			3.80	0.86	.824
Ethical Accountability	.428**	.512**	1		4.15	0.76	.7169
Public Communication	.289*	.458**	.394*	1	4.22	0.72	.703

*ρ < .05, **ρ<.01

4 Empirical Analysis: Testing the Impact of AI Bureaucratic Perceptions

4.1 Descriptive Analysis of Perceived AI Bureaucracy

The descriptive statistics reveal a significant perceptual gap between the instrumental efficiency of AI and the normative values expected by pre-service public officials. As indicated in the data, the mean score for Mechanical Impersonality (Mean=3.80, SD=0.86) was notably higher than that of Instrumental Consistency (Mean=3.10, SD=0.91).

This suggests that while future administrators acknowledge AI's ability to follow rigid rules, they are far more sensitive to its human-absent nature. This heightened perception of impersonality aligns with the concerns raised in Song (2022) regarding the coldness of automated interfaces. The respondents perceive AI not just as a tool for speed, but as a mechanism that structurally lacks empathy, which serves as a primary driver for the psychological alienation identified in earlier chapters.

4.2 Value-Rational Expectations: The Demand for Legitimacy

The analysis of dependent variables shows an overwhelming demand for value-rational safeguards. Public Communication (Mean=4.22, SD=0.81) and Ethical Accountability (Mean=4.15, SD=0.76) recorded the highest mean scores across all survey dimensions. Specifically, 87.5% of respondents expressed concern that AI implementation would lead to a decrease in civic participation. This empirical finding supports the crisis of perceived legitimacy framework; as administrative processes become more automated, the demand for Communicative Rationality—the right to be heard and the right to an explanation—becomes paramount. This high expectation for communication is a normative response to prevent the digital exclusion of marginalized groups who may find the black-box nature of AI bureaucracy impenetrable.

4.3 Correlation Analysis: The Link between Alienation and Communication

The Pearson correlation matrix in Table 2 provides preliminary evidence of the relationship between bureaucratic traits and normative demands. A critical finding is the strong positive correlation between Mechanical Impersonality and Public Communication (r=.458, p<.01). This statistical relationship indicates that as the perceived impersonality of AI increases, so does the craving for democratic engagement. Furthermore, Instrumental Consistency showed a significant correlation with Ethical Accountability (r=.428, p<.01). These results suggest that when AI functions with extreme, rigid consistency, it paradoxically increases the demand for human-in-the-loop oversight to ensure that such consistency does not lead to cruel optimization or ethical neglect.

4.4 Predicting the Demand for Governance

To isolate the causal influence of AI's bureaucratic traits, a multiple regression analysis was conducted. The results yield two pivotal insights into the future of administrative governance:

Table 3. Multiple Regression Results on Value-Rational Expectations

Independent Variables	Model 1: Ethical Accountability(β)	Model 2: Public Communication(β)
Instrumental Consistency	.428***	-.085
Mechanical Impersonality	.154*	.512***
Accountability & Control	.295**	.142
R-squared(R^2)	.485	.392
F-value	15.42***	11.24***

* ρ< .05, ** ρ< .01, *** ρ< .001

The regression model identified Mechanical Impersonality as the most powerful predictor of the demand for reinforced public communication (β =.512, p <.001). This suggests that the psychological alienation caused by AI's lack of empathy is the primary catalyst for the demand for transparency.

Following the logic of Song (2022), this indicates that the more "inhuman" a system feels, the more citizens and officials alike demand a Human-Centric Communication Layer to restore trust in the digital state. Conversely, Instrumental Consistency was found to be the significant driver for Ethical Accountability (β =.428, p <.001). This implies that the predictability of AI is not sufficient for administrative legitimacy; rather, the more machine-like and consistent the system is, the more strongly pre-service officials feel that final legal and moral responsibility must be anchored in human judgment.

4.5 Discussion: The Emergence of AI-driven Alienation

The results synthesized in this chapter demonstrate that the Digital Iron Cage is a perceived reality for future administrators. The data confirms that AI bureaucracy triggers a compensatory demand for Value Rationality. The empirical results of this study must be interpreted through the evolutionary trajectory of the digital divide. As illustrated in **Table 4**, the digital divide has transitioned from a simple matter of hardware access to a complex issue of human rights and social survival. The historical progression of the digital divide demonstrates that as technology becomes more sophisticated, the nature of exclusion becomes more structural.

- The Initial Stage (Access Divide): In the early information period, the gap was defined by physical access to the internet.
- The Saturation Period (Usage/2nd Divide): As access became near-universal, the divide shifted to the quality of use.
- The Oversaturation Period (3rd Information Divide): In the current AI era, the divide has evolved into a fundamental human rights issue. The gap now exists between the "socially vulnerable" and the "non-vulnerable" regarding their ability to exercise agency within an automated state.

Our findings suggest that AI bureaucracy acts as a catalyst for this 3rd Information Divide. The high mean score for Mechanical Impersonality (3.80) indicates that pre-service officials perceive AI as a system that lacks "contextual empathy." For the socially vulnerable—who often require the most administrative support and human-mediated explanation—this mechanical nature represents a digital wall. While the Instrumental Consistency (β =.428) of AI ensures that rules are applied without bias, it also ensures they are applied without mercy. This calculable rule-following, as predicted by Weber, creates a Usage Divide stemming from Quality. When a citizen cannot understand or contest an algorithmic decision, they are not just digitally divided, they are administratively alienated. The strongest empirical link found in this study—Mechanical Impersonality and Public Communication (β =.512)—reflects a normative demand to bridge the 3rd information divide. This demand is not merely about using technology, but about guaranteeing fundamental human rights within the digital administrative state. Pre-service officials recognize that if AI remains an impersonal black box, the social vulnerable will suffer the most. Therefore, the demand for Ethical Accountability (4.15) and Public Communication (4.22) is a call for a Hybrid Governance Model. This model ensures that the transition to AI does not result in an Oversaturation Period where efficiency is gained at the cost of human dignity and democratic inclusion. According to integrating the findings of Song (2022) on digital inclusion, it becomes clear that the digital divide is amplified by the mechanical impersonality of AI. For the digitally vulnerable, an impersonal algorithm is not merely an efficient tool but an exclusionary force. Thus, the analysis proves that administrative legitimacy in the AI era cannot be achieved through instrumental efficiency alone, it requires a Hybrid Governance Model that actively mitigates alienation through transparent communication and human-centric accountability.

Table 4. Define the concept of digital divide by period *Source: Author(2022).*

The stage of change.	**Introduction period.**	**Taking a leap forward**	**The saturation period.**	**The Oversaturation Period**
Types of digital divide	access divide	usage divide	divide steamming from the quality of use	divide guranteeing of the fundamental human right
Term	Initial information divide	First information divide	The 2nd information divide	The 3rd information divide.
explanation	The difference between those who are accessible and those who are not.	The difference between a user and a non.	Differences between users and users.	The difference between the social vulnerable and the non-social vulnerable.

5 Policy Recommendations for Public Communicative

5.1 The Paradox of Algorithmic Efficiency

This study empirically investigated the impact of AI bureaucracy's instrumental traits on the value-rational expectations of pre-service public officials. The results reveal a significant paradox: while AI is integrated to maximize administrative consistency, its extreme manifestation—Mechanical Impersonality—triggers a profound crisis of perceived legitimacy[3].

The empirical data (Table 2) confirmed that future administrators are acutely sensitive to the "human-absent" nature of AI (Mean=3.80). Most notably, the regression analysis proved that Mechanical Impersonality is the primary driver for the demand for Public Communication (β =.512, p <.001). This suggests that the perceived "coldness" of AI is not a neutral technical attribute but a catalyst for psychological alienation, leading citizens and officials to crave democratic engagement as a compensatory defense mechanism against the digital iron cage[2].

Theoretically, this research extends the Weberian critique of bureaucracy into the digital age by identifying a new form of AI-driven Alienation. This occurs when instrumental rationality overwhelms the normative values of the administrative state[5]. Building on the foundational work of Song (2022), this study demonstrates that the digital divide has evolved from a matter of physical access to a crisis of communicative agency. Practically, the overwhelming demand for Ethical Accountability (Mean=4.15) and Public Communication (Mean=4.22) indicates that AI cannot function as a total replacement for human discretion. As emphasized by Song (2022) in the context of voice-based chatbot implementation, for digital public services to be considered legitimate, they must prioritize digital inclusion and ensure that marginalized populations are not structurally silenced by the opacity of algorithmic black boxes [6].

5.2 Policy Recommendations: Toward a Value-Rational Hybrid Governance

To mitigate the risks of AI-driven alienation and restore administrative trust, this study proposes a Hybrid Governance Model based on the following strategic pillars:

1. Mandating Algorithmic Explainability: Public agencies must transition from prioritizing throughput speed to ensuring communicative transparency[7]. Institutionalizing the Right to Explanation is essential to prevent algorithms from becoming instruments of unaccountable power[3].

2. Institutionalizing the Human-in-the-Loop Strategy: The significant correlation between instrumental consistency and ethical accountability(β=.428) underscores the need for a governance structure where final moral and legal decisions remain with human officials[5]. Humans must act as Value Guardians to moderate the rigid outcomes of algorithmic logic.

3. Proactive Multi-Modal Inclusion: Following the evidence presented, administrative AI interfaces must be designed for universal accessibility. This ensures that the digital divide does not transform into a permanent state of social alienation for those unable to navigate purely automated systems[7].

6 Limitations and conclusion

While this study provided significant insights from a sample of 169 pre-service officials, it is limited by its reliance on perceptual data rather than longitudinal behavioral observation. Future research should investigate actual citizen-AI interactions across diverse public sectors—such as social welfare and law enforcement—where the impacts of algorithmic bias and mechanical impersonality may manifest differently[6]. In conclusion, the evolution toward AI bureaucracy must not result in the abandonment of public values. Administrative legitimacy in the digital era is not derived from the technical sophistication of an algorithm, but from its ability to maintain a democratic connection with the people. By anchoring AI in Value Rationality, the public sector can ensure that technology remains a catalyst for Responsive and Responsible Governance rather than a source of systemic alienation.

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Appendix 1.

Table | Perceptions of Instrumental Consistency and Rigidity (N=169)

Item No.	Survey Statement	Disagree / Strongly Disagree (%)	Neutral (%)	Agree / Strongly Agree (%)	Mean (SD)*
2-1	AI data processing follows a predictable and consistent logic, similar to legal regulations.	29.2	45.8	25.0	2.92(0.87)
2-2	AI responds mechanically by strictly adhering to programmed algorithms without modification.	22.9	39.6	37.5	3.19(0.91)
2-3	Decisions made by AI will be more objective as they exclude human emotions or personal feelings.	14.6	31.2	54.2	3.52(1.05)
2-4	While AI implementation increases processing speed, it will reduce creative and flexible solutions.	10.4	27.1	62.5	3.79(0.98)

*Note: Measured on a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). SD denotes Standard Deviation.

Table 3. 3 | Perceptions of Mechanical Impersonality and Bias (N=169)

Item No.	Survey Statement	Disagree / Strongly Disagree (%)	Neutral (%)	Agree / Strongly Agree (%)	Mean (SD)*
3-1	AI processing of tasks (e.g., civil petitions, welfare eligibility) lacks human empathy and contextual understanding.	8.3	20.8	70.9	3.88(0.84)
3-2	Algorithmic bias in AI learning data is likely to be fixed in public services in the form of objective rules.	12.5	33.3	54.2	3.58(0.92)
3-3	AI-handled tasks should be limited to simple duties that do not require human empathy or contextual insight.	16.7	16.6	66.7	3.81(1.02)
3-4	Administrative dispositions by AI (e.g., license revocation, fines) will feel colder and more impersonal than those by human officials.	6.3	25.0	68.7	3.94(0.89)

Table 3. 4 | Perceptions of Accountability and Control Structures (N=169)

Item No.	Survey Statement	Disagree / Strongly Disagree (%)	Neutral (%)	Agree / Strongly Agree (%)	Mean (SD)*
4-1	In the event of an AI error causing harm to citizens, it is difficult to determine whether responsibility lies with the developer or the approving official.	14.6	27.1	58.3	3.65(0.93)
4-2	Procedures for appealing AI decisions will be more complex and inefficient than current administrative litigation processes.	25.0	41.7	33.3	3.33(0.88)
4-3	The integration of AI systems is likely to intensify administrative centralization of local governments by the central government.	10.4	45.8	43.8	3.50(0.87)
4-4	Future civil servants will experience a reduction in their professional discretion as they become more dependent on AI-driven decisions.	12.5	29.2	58.3	3.63(0.96)

Table 3. 5 | Expectations for Public Communication and Democratic Participation (N=169)

Item No.	Survey Statement	Disagree / Strongly Disagree (%)	Neutral (%)	Agree / Strongly Agree (%)	Mean (SD)*
5-1	AI systems could hinder multi-layered communication by providing uniform and standardized information.	4.2	16.7	79.1	4.02(0.76)
5-2	Disclosure of AI algorithmic logic and data processing is essential for administrative democratic legitimacy.	6.3	25.0	68.7	3.85(0.85)
5-3	AI intervention would decrease opportunities for civic participation in policy-making due to "black-boxing."	2.1	10.4	87.5	4.42(0.68)
5-4	Expansion of AI-driven administration could exacerbate the service gap for digitally vulnerable populations.	4.2	18.8	77.0	4.08(0.79)

Table 3. 6 | Expectations for Administrative Ethics and Transparency (N=169)

Item No.	Survey Statement	Disagree / Strongly Disagree (%)	Neutral (%)	Agree / Strongly Agree (%)	Mean (SD)*
6-1	Even if AI handles the logic, the final ethical and legal responsibility for administrative results must rest with a "human" official.	10.4	31.3	58.3	3.65(0.93)
6-2	Public agencies must provide citizens with clear explanations regarding the operational logic and data sources of AI algorithms.	14.6	41.7	43.7	3.33(0.88)
6-3	To prevent algorithmic bias, an independent external organization should regularly audit the fairness of AI administrative systems.	8.3	43.8	47.9	3.50(0.87)
6-4	Enhancing the "Explainability" of AI is more important than simply increasing the speed or efficiency of administrative processing.	12.5	29.2	58.3	3.63(0.96)