

SUPPLEMENTARY MATERIAL

When AI Delegation Becomes Dependence:
Administrative Judgment at Risk

Chengwen Song[†] 

Department of Public Administration, Graduate School, Kookmin University, 77 Jeongneung-ro, Seongbuk-gu, Seoul 02707, Republic of Korea

[†]Corresponding author. Email: wenshao521@kookmin.ac.kr

Editorial Note (23 October 2026)

Supplementary Appendix A, inadvertently omitted during the initial publication production process, was added to the article’s supplementary materials on 23 October 2026. The article’s main text, theoretical arguments, and conclusions remain unchanged.

Supplementary Appendix A. Source-Level Claim and Proposition Map

The manuscript uses a purposive set of 24 full-text works: 21 core works (one conceptual-method source and 20 substantive sources) and three targeted additions. The map below identifies each work’s role, its relationship to the framework, and the boundary placed on the evidence. Proposition links indicate theoretical inputs or contextual relevance; they do not imply that the cited work tested the proposition.

Set	Source	Role and proposition link	Evidence and transfer boundary
Core	Alon-Barkat and Busuioc (2023)	Context-dependent advice use and selective adherence; P2	Experimental findings concern particular samples and advice contexts. Civil-servant responses do not establish long-term capability change.
Core	Anastasopoulos (2026)	Institutional knowledge loss and hard-to-reverse reliance; adjacent construct and input to P4’s limited-alternatives condition	Public-administration theory identifies related risks; it supplies an input to the deductive feedback mechanism, not a test of P4.
Targeted	Argote and Miron-Spektor (2011)	Experience, knowledge creation, retention, and transfer across roles; P6	Organizational-learning theory supplies a cross-level mechanism, not direct evidence about AI use in government.
Core	Bainbridge (1983)	Practice displacement, monitoring, and recovery after automation; P1 and P5	Industrial-process analysis motivates a mechanism analogy; it does not estimate generative-AI effects in public agencies.
Core	Benda et al. (2022)	Appropriate reliance in clinical AI; P2 and calibrated-reliance boundary	A clinical informatics perspective supports contextual reliance principles, not public-sector capability effects.
Core	Bovens (2007)	Actor–forum accountability, explanation, questioning, judgment, and consequences; P7	Conceptual framework for accountability; it does not measure AI dependence.



Set	Source	Role and proposition link	Evidence and transfer boundary
Core	Bovens and Zouridis (2002)	ICT-mediated movement of discretion toward systems and designers; P3 and public-administration context	Analysis concerns earlier information systems and administrative discretion, not current generative or agentic AI effects.
Core	Bullock, Young, and Wang (2020)	Bureaucratic form, AI, and public-service discretion; P3 and role-allocation context	Theoretical analysis supports discretion pathways; it does not establish cognitive decline.
Targeted	Deng and Sun (2025)	Perceived discretion and felt administrative accountability among street-level officials; P7 context	Intragroup survey experiment with traffic police measures felt accountability to supervisors, not legal responsibility, citizen remedy, or long-term capacity.
Core	Endsley and Kiris (1995)	Situation awareness and performance after automation failure; P1 and P5 mechanism analogy	Navigation-task experiment informs monitoring and recovery mechanisms; it does not directly test public administration.
Core	Green (2022)	Competence, authority, and information limits in human-oversight policies; P2, P3, and P7 conditions	Review of government policies identifies design limitations; policy requirements are not evidence of effective oversight in practice.
Core	Jaakkola (2020)	Rationale for conceptual research design and theory development	Methodological guidance only; not substantive evidence for the framework.
Core	H.-P. Lee et al. (2025)	Self-reported cognitive effort and confidence during generative-AI-supported work; P1 and P5 boundary	Survey of knowledge workers measures self-reports, not objective longitudinal skill change among public employees.
Core	J. D. Lee and See (2004)	Trust and appropriate reliance under complexity and uncertainty; P2	Review of automation research informs reliance theory; it does not establish public-sector AI effects.
Core	OECD (2026b)	Government transformation, retained institutional capability, and service readiness; institutional input to P4	Policy analysis informs continuity and safeguards; it does not test subsequent delegation following capacity decline.
Targeted	OECD (2026a)	Distinctions among action autonomy and agentic capability; scope conditions for the framework	Conceptual policy paper defines capability categories; it does not test organizational outcomes or AGI.
Core	Parasuraman and Riley (1997)	Use, misuse, disuse, and abuse of automation; P2 and P3 context	Conceptual human-factors framework; it informs automation categories, not a measured public-sector dependence effect.
Core	Risko and Gilbert (2016)	Cognitive offloading as external support for information processing; P1 and P5	Review supports the offloading mechanism; it is not direct evidence about public officials or long-term generative-AI effects.
Core	Selten, Robeer, and Grimmelikhuijsen (2023)	Street-level officials' trust in recommendations aligned with professional judgment; P2	Repeated-measures vignette experiment measures recommendation trust in a defined police setting, not challenge capacity over time.
Core	Song et al. (2026)	Cognitive authority attribution and "cognitive sacredness"; P2 conceptual pathway	Conceptual account of human-AI meaning-making; it does not document public-sector dependence or cognitive decline.
Core	Wong (2026)	Answerable office and public judgment in algorithmic governance; P7	Normative and conceptual argument concerns consequential, legally operative, contestable decisions; it does not estimate empirical effects.

Set	Source	Role and proposition link	Evidence and transfer boundary
Core	Wuttke, Jungherr, and Rauchfleisch (2026)	Assessability, dependency, contestability, and perceived control; institutional dependency mechanism and P7 boundary	Their theory already connects automation to expertise erosion, weakened scrutiny, and withdrawal constraints; their empirical test measures perceived control. This article refines diagnosis through separate task-capacity floors and P1/P5/P6/P4.
Core	Young, Bullock, and Lecy (2019)	Framework for AI augmentation or replacement of administrative discretion; P3	Conceptual framework informs task and discretion conditions, not longitudinal capacity effects.
Core	Zhang, Hsieh, and Liu (2025)	ChatGPT dependence and work effort in a public-service context; construct boundary	Online survey of Taiwanese public-school teachers reports associations with work effort and self-efficacy; work effort is not a measure of administrative judgment or capacity.

Source Accounting

Analysis began with the 21 works already collected and cited for the project. Retention required full-text relevance to a construct, mechanism, public-sector condition, or safeguard. Bibliographic and claim matching was completed on 19 October 2026. Three revision-stage searches of publisher and official-agency sites supplied the targeted additions on learning, felt accountability, and agentic capability. The recoverable record consists of the full texts, source audit, and this map; the initial discovery and exclusion history of the core set was not retained. Earlier project database exports do not establish a screening denominator for this article.

Derivation and Measurement of P4

P4 is an original deductive feedback proposition. The mechanism combines a task-relevant capacity decline with continuing service obligations, an independently assessed belief that AI remains viable, and limited qualified alternatives. Anastasopoulos (2026) informs institutional knowledge loss and constraints on reversing delegation; OECD (2026b) informs retained capability and service readiness. None of the included works tests the complete feedback relationship. Tests of P4 should measure these conditions before or independently of the later delegation decision, record competing responses such as restriction or training, and treat an absence of increased delegation under the specified conditions as evidence against the proposition.