Chapter 5
AI-Driven Transformation in Public Governance

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ABSTRACT

Artificial intelligence (AI) and advanced digital technologies are transforming public governance, leading to Public Administration 5.0. This new model enhances decision-making, public services, and citizen engagement through the analysis of real-time data in sectors like healthcare and urban planning. While it offers opportunities for efficiency and personalized services, AI integration also poses challenges, including algorithmic bias, transparency, data privacy, and workforce displacement. This paper explores the transition from Public Administration 3.0 and 4.0 to 5.0, examining its potential and risks. Through examples and theoretical frameworks, it demonstrates how AI fosters more responsive institutions while addressing ethical concerns and workforce implications to maintain public trust and ensure equitable benefits for all citizens.

1. INTRODUCTION

The rapid advancement of digital technologies is fundamentally reshaping public governance, moving from traditional public administration models towards a more interconnected, intelligent, and data-driven ecosystem. Public administration, long regarded as the backbone of societal organization, has evolved significantly over the past few decades, adapting to the changing needs of governance in an increasingly digital world (Madan & Ashok, 2022; Medaglia, Gil-Garcia, & Pardo, 2023; Haug, Dan, & Mergel, 2024). With the advent of artificial intelligence (AI), we are witnessing the emergence of Public Administration 5.0—a transformative leap towards a "super-smart" society where digitalization

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and intelligent systems coalesce to create more efficient, responsive, and inclusive forms of governance (Criado, Sandoval-Almazán, & Gil-Garcia, 2024).

The shift from New Public Administration (Public Administration 3.0), which emphasized human-centered governance and accountability, to Digital Public Administration (Public Administration 4.0) marked the incorporation of digital tools and platforms into government operations (Lynn Jr & Malinowska, 2018; Medaglia et al., 2023; Giest & Klievink, 2024). However, the transition to Public Administration 5.0 goes beyond mere digitization; it represents a paradigm where AI, big data, and algorithmic decision-making play critical roles in driving policy innovation, public service delivery, and civic engagement (Boinapalli, 2020; Badmus et al., 2024).

As AI becomes increasingly integrated into the fabric of public governance, it is not only reshaping operational efficiencies but also posing new ethical, legal, and social challenges (Akter et al., 2023; Gianni, Lehtinen, & Nieminen, 2022; Butcher & Beridze, 2019). Questions surrounding algorithmic accountability, transparency, data privacy, and the role of human oversight in AI systems have emerged as central concerns for policymakers and citizens alike (Djeffal, Siewert, & Wurster, 2022; Wilson, 2022). Furthermore, the deployment of AI in governance must strike a delicate balance between enhancing administrative effectiveness and safeguarding democratic values such as citizen autonomy, equity, and participation (Giest & Klievink, 2024).

This paper seeks to explore the evolving role of AI in public governance, analyzing its impact on the current and future state of public administration. By examining both theoretical frameworks and empirical cases, this study aims to contribute to a deeper understanding of how AI-driven governance can be harnessed to build more efficient, transparent, and inclusive public institutions while addressing the potential risks posed by these technologies (Baldwin, Chen, & Cole, 2019; Mergel et al., 2024; Galindo et al., 2021).

2. EVOLUTION FROM PUBLIC ADMINISTRATION 3.0 TO 5.0

The development of public administration has always mirrored technological advancements and social shifts within society. As public expectations evolved, governments continuously adapted their methods, seeking to foster transparency, enhance service delivery, and maintain accountability (Lynn Jr & Malinowska, 2018; Giest & Klievink, 2024). This adaptation has led to several pivotal transformations in governance models, each building upon the successes and challenges of the previous era (Madan & Ashok, 2023; Boppiniti, 2023).

The evolution of public administration has now culminated in the current phase of AI-driven governance, which promises to further revolutionize how governments serve their citizens (Mergel et al., 2024; Haug, Dan, & Mergel, 2024). AI has the potential to reshape governance by enabling more data-driven and efficient processes that improve the quality of services while maintaining transparency and accountability (Criado et al., 2024; Gianni et al., 2022).

2.1 Public Administration 3.0: The Human-Centered Approach

Public Administration 3.0, also known as New Public Administration, emerged in response to the limitations and rigidity of traditional bureaucratic models that dominated earlier governance frameworks. This phase, born out of a desire to humanize governance, sought to decentralize authority and empower