


Determinants of Public Sector Managers' Intentions to Adopt AI in the Workplace

Khalid Majrashi, Digital Transformation and Information Center, Institute of Public Administration, Riyadh, Saudi Arabia*

 <https://orcid.org/0000-0001-6986-5334>

ABSTRACT

This study investigated the determinants of public sector managers' intentions to adopt artificial intelligence (AI) systems within their organizations. An extended technology acceptance model (TAM) was developed, incorporating additional constructs including fairness, humanity, reliability, safety, transparency, accountability, privacy, security, trust, social norms, tolerance, impact, and isomorphic pressure. A survey was conducted among 330 public sector managers, and the data were analyzed using linear regression tests to evaluate the model. The results showed significant positive influences of both perceived usefulness and perceived impact on managers' attitudes and behavioral intentions toward AI adoption. Isomorphic pressure was also a significant determinant of managers' behavioral intentions toward adopting AI systems. Our findings also indicated that perceptions related to AI ethical principles, such as transparency, privacy, and security, influenced managers' trust in AI systems.

KEYWORDS

AI Adoption, AI Ethics, Artificial Intelligence, Attitudes, Behavioral Intentions, Managers, Public Sector, Technology Acceptance Model, Trust in AI, Workplace

INTRODUCTION

The definition of AI lacks a universal consensus, with varying perspectives on its capabilities. AI is often conceptualized as machines or computer systems mimicking human thought and behavior, either by performing tasks requiring human-like intelligence, such as decision-making, or by employing rational thinking based on logic and the careful consideration of options (Russell & Norvig, 2021). AI can be classified as “weak AI”, excelling in specific domains but incapable of autonomously solving problems outside those areas (Wamba et al., 2021), while speculation surrounds the potential for AI to achieve singularity, becoming “conscious/self-aware AI” if it surpasses human intelligence (Kaplan & Haenlein, 2019).

Artificial Intelligence systems are revolutionizing workplace practices by injecting unprecedented value into complex processes and decision-making frameworks. This wave of technological advancement is not confined to the private sector; it is also making significant strides within the public sector, as evidenced by the growing body of research (Wirtz et al., 2019). Despite high expectations that AI will enhance the public sector's operational efficiency, services and decision-making quality,

DOI: 10.4018/IJPADA.342849

*Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

the integration of AI technologies into public organizations has been modest (Selten & Klievink, 2024). Cutting-edge AI technologies, including large language models, computer vision, generative AI, robotics, natural language processing (NLP), and machine learning algorithms, are evolving at a breakneck pace. These advancements enable AI to tackle increasingly sophisticated tasks, paving the way for its potential to significantly improve the efficiency and effectiveness of public sector operations and services (Madan & Ashok, 2023; Margetts & Dorobantu, 2019; Selten & Klievink, 2024). However, many public organizations find themselves at a crossroads, eager to harness these innovative technologies yet hindered by the rapid technological evolution of AI. This challenge is compounded by a range of barriers that impede the adoption and effective utilization of AI within the public sector. Such barriers include, but are not limited to, issues related to data governance, ethical considerations, and a lack of technical expertise for implementing AI solutions (Kempeneer & Heylen, 2023; Madan & Ashok, 2023; Mergel et al., 2023; Wirtz et al., 2019).

Managers hold a critical position within organizations, exerting substantial influence over the adoption of new technologies (Gagnon et al., 2000). Despite their significant impact, the perspectives of managers are often overlooked (Nielsen et al., 2019; Ullah et al., 2021). Research indicates that transformative leadership traits play a crucial role in influencing AI adoption in the public sector (Madan & Ashok, 2023). Chief information officers (CIOs) are also identified as key players in the adoption and dissemination of AI, requiring not just technical expertise but also political savvy to shape the design of enterprise systems within and across government agencies (Madan & Ashok, 2023). However, studies reveal that public managers, including CIOs, often make decisions regarding the use of AI and other technologies based on pre-existing attitudes and cognitive frames (Criado et al., 2021; Guenduez et al., 2020; Kempeneer & Heylen, 2023). This highlights the importance of understanding their attitudes and intentions to effectively address their concerns and potentially facilitate more successful AI implementations in public organizational settings.

Studies have also highlighted that managers in public organizations are increasingly adopting AI systems (de Sousa et al., 2019). However, the factors driving public sector managers' intentions to adopt AI in their workplaces are not well understood. While the attitudes and intentions of managers utilizing AI in the private sector have been studied considerably (Cao et al., 2021), there remains a lack of research investigating the intentions of managers to adopt AI in the public sector. This study aims to bridge this knowledge gap by exploring the determinants of AI adoption among managers in the public sector.

In this study, the author developed a model aimed at predicting public managers' intentions to adopt AI systems within their workplaces, which is rooted in the TAM (Davis, 1985, 1989). The AI adoption model for public sector managers (AI-AMPM) extends TAM by integrating additional AI ethics and socio-organizational predictive factors (see Figure 1). These additional factors are derived from the literature and AI ethics principles and guidelines. These factors include fairness, humanity, reliability, safety, transparency, accountability, privacy, security, and trust, alongside social norms, tolerance, impact, and isomorphic pressure (Choudhury & Shamszare, 2023; Choung et al., 2023; DiMaggio & Powell, 1983; European Commission, 2019; Farson & Keyes, 2003; Hawley, 1968; Kriegesmann et al., 2005; Majrashi, 2022; OECD, 2019; SDAIA, 2023a; Shin, 2020; Slutzky, 2012). Each of these factors—as perceived by managers—was considered for its potential influence on AI adoption within the public sector. The model was validated through a study focused on understanding the intentions of public sector managers in Saudi Arabia to adopt AI systems.

Overall, the research findings affirmed the relevance of the original TAM constructs in the context of AI system adoption among public sector managers. The results also highlighted the significant role of perceived impact in influencing managers' attitudes and intentions toward AI adoption. Isomorphic pressure was also identified as a key determinant in shaping public sector managers' intentions to adopt AI systems within their organizations. Additionally, perceived transparency, perceived privacy, and perceived security were found to have a strong predictive power for managerial trust in AI systems.

24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/determinants-of-public-sector-managers-intentions-to-adopt-ai-in-the-workplace/342849

Related Content

Conducting Survey Research Using MTurk

Silvana Chambers and Kim Nimmon (2019). *Crowdsourcing: Concepts, Methodologies, Tools, and Applications* (pp. 410-439).

www.irma-international.org/chapter/conducting-survey-research-using-mturk/226748

Exploring Local Governance and E-Services in Qatar

Nada Abdelkader Benmansour, Noora Ahmed Lari and Bethany Shockley (2019). *International Journal of Public Administration in the Digital Age* (pp. 1-13).

www.irma-international.org/article/exploring-local-governance-and-e-services-in-qatar/241263

Making Sense of the Best Interest of Children in Vulnerable Family Relationships

Mutsuko Takahashi (2013). *Healthcare Management and Economics: Perspectives on Public and Private Administration* (pp. 211-216).

www.irma-international.org/chapter/making-sense-best-interest-children/75021

City Growth Patterns Intensifying Complexities to Control Vehicular Exhaust Pollution in Pakistan: A Case Study of Peshawar City

Niaz Ahmad (2022). *International Journal of Urban Planning and Smart Cities* (pp. 1-15).

www.irma-international.org/article/city-growth-patterns-intensifying-complexities-to-control-vehicular-exhaust-pollution-in-pakistan/301554

Social Media Use and Political Mobilization

Justin W. Holmes and Ramona S. McNeal (2018). *International Journal of Public Administration in the Digital Age* (pp. 50-60).

www.irma-international.org/article/social-media-use-and-political-mobilization/210106