

Chapter 6

Artificial Intelligence Research Trends in E-Governance: A Bibliometric Analysis of Decision Making

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ABSTRACT

The purpose of this study is to investigate the research trends of artificial intelligence (AI) in e-governance, with the aim of analyzing the application of AI in decision-making in the government sector. This study is based on the theory of Artificial Intelligence which explains the ability of machines to imitate human intelligence, especially in terms of decision-making, data processing, and pattern analysis. This study uses bibliometric analysis to identify research trends, with data taken from the Scopus database. The results show a significant increase in the number of publications related to AI in e-governance from 2019 to 2023, with the United States dominating research in this field. The keywords “artificial intelligence” and “decision making” dominate the research network. This study provides insights into how AI can improve efficiency and transparency in e-governance through data-driven decision-making, as well as accelerate public services.

INTRODUCTION

In the ever-evolving digital era, artificial intelligence (AI) has emerged as one of the leading technologies that influences various sectors, including government. (Hakimi et al., 2024). Digital transformation involving AI provides significant opportunities to improve efficiency, transparency, and accountability in government management. AI not only supports faster and more accurate data processing, but also

DOI: 10.4018/979-8-3693-9286-7.ch006

helps in smarter and evidence-based decision making.(Bokhari & Myeong, 2023). In the context of e-governance, the contribution of AI is increasingly crucial to optimize public services, accelerate administrative processes, and support policies that are responsive to community needs.(Muhammad et al., 2024). However, the implementation of AI in e-governance faces various challenges, including technological readiness, ethics, and public policy.(Hornjak, 2024)Therefore, this study aims to explore the trend of AI implementation in e-governance using a bibliometric analysis approach, in order to provide insight into current developments and future opportunities in AI-based decision making.(Pani & Mourya, 2023).

Background

The development of artificial intelligence (AI) technology has experienced rapid progress in recent decades, marked by increased computing capabilities, more sophisticated algorithms, and the availability of big data that allows AI to learn and adapt more effectively.(Hakimi et al., 2024). The application of AI in e-governance, which refers to the use of digital technologies by governments to improve public services, is becoming increasingly common.(Alshaer, 2023). AI technology is used to automate administrative processes, increase service efficiency, improve decision-making, and increase transparency and public participation. With the integration of AI, e-governance is able to provide faster and more accurate responses to community needs, while reducing the burden of traditional bureaucracy.(Li et al., 2023).

In the era of digital government, technology-enabled decision-making is becoming increasingly important to ensure efficiency, transparency and accuracy in various aspects of governance.(Hakimi et al., 2024). Technology enables faster and more accurate data analysis, helping decision makers gain deeper, evidence-based insights, ultimately improving the quality of public services.(Jha & Jha, 2024). Amidst dynamic changes in community needs, the government must utilize technology to optimize the decision-making process, so that it can respond to challenges more effectively and proactively, and increase public trust in the resulting policies.(Bokhari & Myeong, 2023).

While the integration of artificial intelligence in e-governance holds considerable promise, it encounters substantial challenges, especially in developing nations. These include insufficient technological infrastructure, a lack of adequate data access, and a shortage of expertise in AI implementation. Furthermore, it is crucial to address concerns related to data privacy, biases inherent in AI algorithms, and the potential ramifications of automated decision-making on public policy. Consequently, this study seeks to investigate the trends, opportunities, and challenges associated with the adoption of AI in e-governance, with a particular emphasis on its capacity to enhance decision-making processes and improve public service delivery

Scope and Objectives

Analyzing research trends in AI for e-governance is essential because it can help understand the development, potential, and challenges faced in the application of AI technology in the government sector. By identifying trends and patterns in research, policymakers and researchers can gain insight into areas that are advanced and those that require more attention, thereby maximizing the efficiency and effectiveness of AI implementation. Through a bibliometric approach, this study aims to provide a clear picture of previous research contributions, the impact of AI innovations in e-governance, and opportunities for further development in the future.

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