

Artificial Intelligence for Government Process Management in Brazil: A Design Science Approach to Smart Public Administration

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Abstract

The growing adoption of Artificial Intelligence (AI) in public administration has created opportunities to improve administrative efficiency while introducing new governance challenges related to transparency, accountability, explainability, legal compliance, and digital sovereignty. This study aims to present the AI-SEI Governance framework, which was integrated into Brazil's Electronic Information System (SEI) within the National Electronic Process (PEN) technology platform. The research employed a qualitative, descriptive methodology based on a document analysis of Brazilian legislation and digital government policies; a systematic review of international literature on Digital Government, AI Governance, Explainable AI, Human-in-the-Loop, Digital Sovereignty, and Public Value Theory; and a synthesis of functional and institutional requirements for the intelligent management of administrative processes. The resulting framework outlines four dimensions of the platform: technological infrastructure, intelligent services, governance mechanisms, and public value. The study concludes that the adoption of AI within the SEI should be understood primarily as a governance challenge rather than merely a technological initiative, offering a structured roadmap for implementing trustworthy, transparent, and human-centric AI in digital government. This study contributes to the literature by integrating Digital Government, Artificial Intelligence Governance, Design Science Research, Explainable AI, Human-in-the-Loop, Digital Sovereignty, and Public Value Theory.

Keywords

Artificial Intelligence, Digital Government, Electronic Information System, National Electronic Process, Design Science Research, AI Governance, Public Value, Digital Sovereignty