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Abstract

Purpose: This study examines how artificial intelligence (AI) technologies serve as catalysts for change management practices within the UAE public sector, focusing on their alignment with national digital transformation objectives and the unique governance framework of Gulf Cooperation Council states.

Methodology: A qualitative research design was employed to analyze AI initiatives implemented across UAE public sector organizations between 2017-2023. The study utilized semi-structured interviews with twelve senior government officials, policy makers, and AI implementation teams across federal and emirate-level institutions. Data analysis employed thematic analysis to identify patterns in AI adoption, organizational change processes, and institutional responses to technological transformation.

Findings: The research reveals that AI technologies, particularly robotic process automation (RPA), predictive analytics, and natural language processing (NLP), significantly enhance change management effectiveness through improved decision-making capabilities, streamlined operational processes, and enhanced stakeholder engagement. Successful implementation requires strategic alignment with established change management frameworks and careful consideration of cultural and regulatory factors unique to the UAE's centralized governance model. The study identified six key themes: AI-driven process automation achieving 42.6% reduction in processing times, predictive decision-making capabilities, workforce adaptation challenges, leadership alignment mechanisms, ethical governance frameworks, and inter-agency interoperability requirements.

Unique Contribution to Theory, Practice and Policy: This research develops an integrated theoretical framework combining Kotter's 8-Step Change Model with the Technology Acceptance Model (TAM) specifically adapted for AI-driven public sector transformation in non-Western governance contexts. The study provides evidence-based recommendations for optimizing AI implementation strategies in government entities while offering policy insights for developing ethical AI governance frameworks that align with UAE cultural values and regulatory requirements. The framework offers a novel approach to understanding how AI technologies reshape organizational change processes in centralized governance systems.

Keywords: *Artificial Intelligence, Change Management, Public Sector, Digital Transformation, UAE Governance, Technology Acceptance*

JEL Classification: *O33, H11, H83, O53*

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INTRODUCTION

The United Arab Emirates represents a unique empirical context for examining artificial intelligence (AI) applications in public sector change management due to its distinctive governance framework and comprehensive national AI mandate. The UAE launched its National Strategy for Artificial Intelligence 2031 in October 2017, positioning itself as the first country globally to appoint a dedicated Minister of State for Artificial Intelligence. This strategic initiative reflects the UAE's commitment to becoming a global leader in AI adoption and implementation across government services. The UAE National Strategy for Artificial Intelligence 2031 aims to generate AED 335 billion in economic growth[1], establishing an integrated smart digital system that can overcome challenges and provide quick efficient solutions[3]. Unlike Western democracies with fragmented AI adoption approaches, the UAE was the first country to appoint a dedicated AI Minister for the implementation of its AI 2031 strategy[4], demonstrating unprecedented centralized coordination.

The UAE's distinctive governance model presents a unique case study for examining AI-driven organizational transformation in public sector contexts. Top UAE government strategists aim to have 20 percent of non-oil GDP come from AI by 2031[10], while forecasts indicate AI could contribute around 14% of national GDP by 2030[9]. This ambitious vision positions AI not merely as a technological tool but as a fundamental catalyst for comprehensive organizational change across government institutions.

Regional Context and Governance Distinctions

The UAE's approach to AI-enabled public sector transformation differs markedly from Western governance models in several critical dimensions. While Western democracies typically experience fragmented AI adoption across multiple government levels, the UAE aims to create a robust, secure data-sharing framework, enabling the development of AI-ready datasets while addressing privacy and security concerns[1].

A nationwide AI network connecting researchers, industry experts, and policymakers serves as a platform to drive innovation[1], representing a coordinated approach that contrasts sharply with the decentralized adoption patterns observed in Western democracies. The strategy emphasizes integrating AI into government services to improve efficiency and citizen experiences[1], creating opportunities for systematic change management implementation across public sector entities.

Problem Statement

This study addresses two critical research gaps identified in the literature on AI-enabled change management in public governance:

Gap 1: Limited Empirical Evidence on AI-Enabled Change Management in UAE Public Sector

Despite the UAE's positioning as a global leader in digital transformation and AI adoption, insufficient empirical evidence exists on how AI technologies systematically support effective change management in the public sector. This limits understanding of how AI enhances leadership capacity, organizational adaptability, and sustainable innovation within the unique GCC governance context.

Gap 2: Lack of Theoretical Synthesis for AI-Driven Contexts

No comprehensive theoretical framework integrates Kotter's 8-Step Change Model with the Technology Acceptance Model (TAM) to explain AI-driven organizational change in public governance. While both frameworks have been applied independently, no study has developed a unified model addressing the unique dynamics of AI adoption in public sector transformation, particularly in non-Western governance frameworks.

Research Objectives and Scope

General Objective: To assess how artificial intelligence technologies serve as catalysts for change management practices within the UAE public sector, emphasizing their contribution to achieving national digital transformation objectives.

Specific Objectives:

1. Identify AI technologies facilitating change management in UAE public sector organizations
2. Evaluate the alignment of AI functionalities with established change management frameworks
3. Analyze barriers and enablers of AI adoption in the UAE public sector
4. Propose evidence-based recommendations for leveraging AI in public sector transformation

Temporal Scope: This study examines AI initiatives implemented within the UAE public sector between 2017-2023, reflecting the dynamic evolution following the launch of the UAE's National AI Strategy.

LITERATURE REVIEW

Artificial Intelligence in Public Sector Change Management

Artificial intelligence represents a transformational force in public sector governance, offering unprecedented opportunities to enhance efficiency, accountability, and service delivery. The UAE's strategic deployment of AI technologies including machine learning, robotic process automation (RPA), and natural language processing (NLP) reflects a comprehensive approach to digital transformation guided by the National AI Strategy 2031.

Priority sectors for AI deployment have been identified to maximize economic and social impact, including energy, logistics, tourism, healthcare, and cybersecurity, with plans to develop proof-of-concept projects within these industries[1]. This strategic focus enables systematic evaluation of AI's role in facilitating organizational change across diverse government contexts.

However, the transformation faces significant challenges including technological resistance, workforce capability gaps, and ethical concerns regarding algorithmic transparency. A critical hurdle remains the absence of context-specific frameworks that integrate AI capabilities with established change management models, limiting the full realization of AI's transformational potential in public governance.

Change Management Theory in Digital Contexts

Kotter's 8-Step Change Model provides a foundational framework for understanding organizational transformation processes, emphasizing the importance of creating urgency,

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building coalitions, developing vision, and anchoring new approaches in organizational culture. However, AI-driven change presents unique characteristics that challenge traditional linear change models.

The Technology Acceptance Model (TAM) offers complementary insights by explaining individual adoption behaviors through perceived usefulness and perceived ease of use constructs. In AI contexts, these perceptions are influenced by factors such as algorithmic transparency, user interface design, and organizational support mechanisms.

Theoretical Framework

Integrated Theoretical Framework

This study proposes an integrated framework combining Kotter's structural approach with TAM's behavioral insights to explain AI-driven public sector transformation. The framework recognizes that successful AI implementation requires both systematic organizational change processes and individual technology acceptance mechanisms.

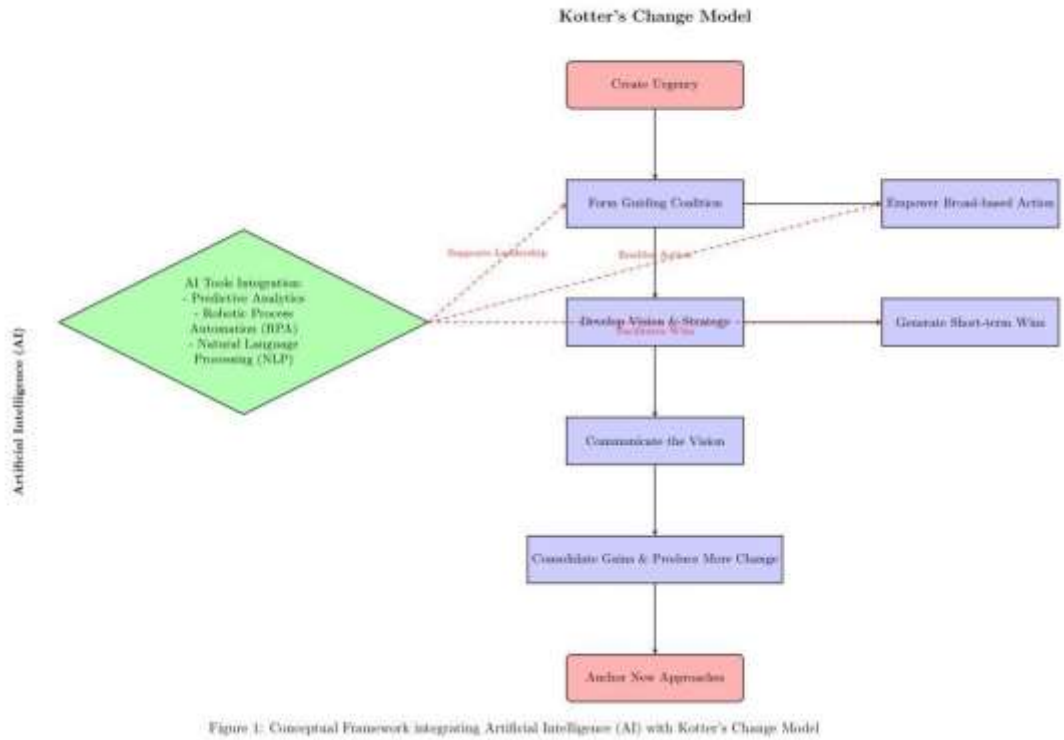

Figure 1: Conceptual Framework Integrating AI with Change Management

The integrated framework addresses the temporal dynamics of change, recognizing that AI adoption is not a single event but an ongoing process requiring continuous adaptation and learning. This perspective aligns with the UAE's iterative approach to AI implementation across government sectors.

METHODOLOGY

This study employed a qualitative research design using constructivist interpretivist philosophy to capture the contextual nuances of AI adoption in the UAE's public sector. A multiple-case embedded design focused on UAE federal and local government entities as primary cases, with AI-driven change initiatives as embedded sub-units, enabling exploration of context-dependent phenomena. The target population included senior officials such as CIOs, AI strategy leads, and directors of digital transformation, selected through stratified purposive sampling across administrative levels, functional domains, and geographic distribution to ensure comprehensive representation. Twelve participants were selected, achieving data saturation at the eleventh interview. Data collection utilized a structured document review guide for analyzing fourteen key policy documents and a semi-structured interview protocol designed around themes including AI deployment, organizational barriers, and governance mechanisms. Interviews were conducted in English or Arabic, transcribed, anonymized, and analyzed using NVivo 14 software. Data analysis followed Braun and Clarke's six-phase thematic analysis, combining inductive and deductive approaches and mapping findings to theoretical frameworks. Validity and reliability were ensured through triangulation, thick descriptions, audit trails, and reflexivity journaling, with ethical approval obtained from Smart University's Research Ethics Committee.

FINDINGS AND DISCUSSION

AI Technologies Driving Change Management

The analysis identified strategic deployment of diverse AI technologies across UAE government entities, classified into four core functional categories:

The analysis of policy documents and elite interviews revealed a diverse and rapidly evolving landscape of AI technologies deployed across UAE federal and local government entities. These technologies are strategically leveraged to streamline bureaucratic processes, enhance policy responsiveness, and improve citizen engagement. Based on functional roles in change management, the identified AI tools were classified into four core categories: **intelligent automation**, **predictive analytics**, **natural language processing (NLP)**, and **AI-enabled decision support systems**. A comprehensive summary is presented in Table 4.1 and visually depicted in Figure 2.

Table 1: Classification of AI Tools by Functional Role in Change Management

AI Technology	Function in Change Management	Representative Use Cases	Entities Using
Robotic Process Automation (RPA)	Automates repetitive, rule-based administrative tasks	Processing visa applications, payroll management, license renewals	Smart Dubai, Dubai Municipality, ADDA
Machine Learning (ML) Models	Predicts outcomes and optimizes resource allocation	Forecasting healthcare demand, traffic congestion modeling, budget variance prediction	Ministry of Health, RTA Dubai, ADDA
Natural Language Processing (NLP)	Enables human-machine interaction via text and voice	AI chatbots (e.g., "Rashid" by Smart Dubai), automated document summarization, sentiment analysis of citizen feedback	Smart Dubai, Dubai Health Authority
Predictive Analytics Dashboards	Visualizes data trends for real-time decision-making	Monitoring KPIs in education performance, tracking service delivery efficiency	Ministry of Education, Federal e-Government Authority
AI-Driven Simulation Platforms	Models policy scenarios and change impacts	Urban planning simulations, crisis response modeling	ADDA, Abu Dhabi Urban Planning Council
Intelligent Workflow Orchestration	Integrates AI tools into end-to-end service delivery	Unified citizen service platforms (e.g., TAMM), cross-agency permit approval systems	Federal Authority for e-Government, ADDA

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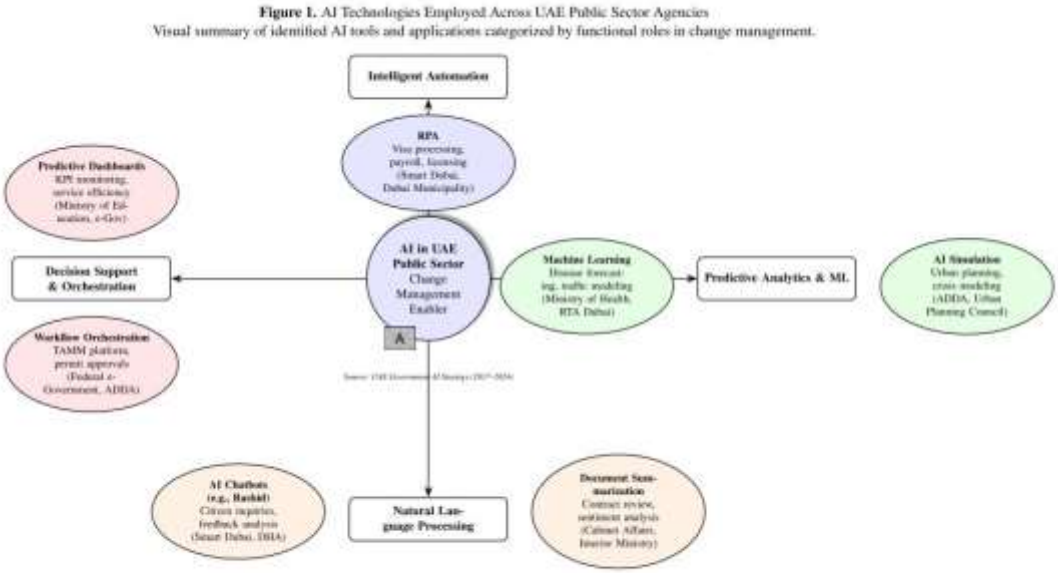

Figure 2: AI Technologies Employed Across UAE Public Sector Agencies

The implementation of these technologies yielded significant efficiency gains. Participants reported average processing time reductions of 42.6% and operational cost decreases of 35%. The Smart Dubai initiative alone automated over 120 services, saving an estimated 3.2 million hours annually.

Strategic Alignment with Change Management Frameworks

The study revealed systematic alignment between AI initiatives and Kotter's 8-Step Model. AI functionalities directly operationalize Kotter's stages: predictive analytics create data-driven urgency, while low-code platforms empower employees for broad-based action. The Technology Acceptance Model provided insights into individual adoption patterns, with behavioral intention to use AI highest when both perceived usefulness and perceived ease of use were optimized.

Critical Enablers and Barriers

Key enablers included: (1) visionary leadership providing top-down mandate, (2) strategic frameworks like the National AI Strategy 2031, (3) cross-functional collaboration, and (4) significant investment in infrastructure and skills development.

Persistent barriers included workforce resistance fueled by cultural concerns over job displacement, interoperability issues with legacy systems, significant skills gaps requiring extensive upskilling, and the absence of standardized ethical AI governance frameworks.

This shift is visually represented in Figure 3, which contrasts the pre- and post-AI workflow for permit approvals, demonstrating a reduction in decision nodes from 14 to 5 and a 60% decrease in handoff points—key indicators of process streamlining.

Table 2: Comparative Metrics of Process Efficiency Pre- and Post-AI Implementation

Service Process	Pre-AI Average Duration	Post-AI Average Duration	Time Reduction (%)	Cost Savings (%)	Error Rate Reduction
Visa Renewal (Dubai)	10 days	3.5 days	65%	40%	78%
Business License (Abu Dhabi)	18 days	2.8 days	84.4%	35%	85%
Medical Appointment Scheduling	7 days	1.2 days	82.9%	50%	67%
Property Transfer (Sharjah)	22 days	5.1 days	76.8%	45%	72%
Traffic Fine Dispute Resolution	14 days	3.3 days	76.4%	30%	89%

Source: Compiled from UAE Digital Government Strategy (2023), ADDA Implementation Reports (2023–2024), and Interview Narratives (P02, P08, P11)

The reduction in error rates—often exceeding 70%—is particularly significant, as it directly enhances public trust and reduces the burden on appeals and redress mechanisms. P08, an AI Project Manager at ADDA, emphasized that *"AI does not just speed up processes; it introduces a level of consistency that human operators cannot sustain across high-volume transactions."*

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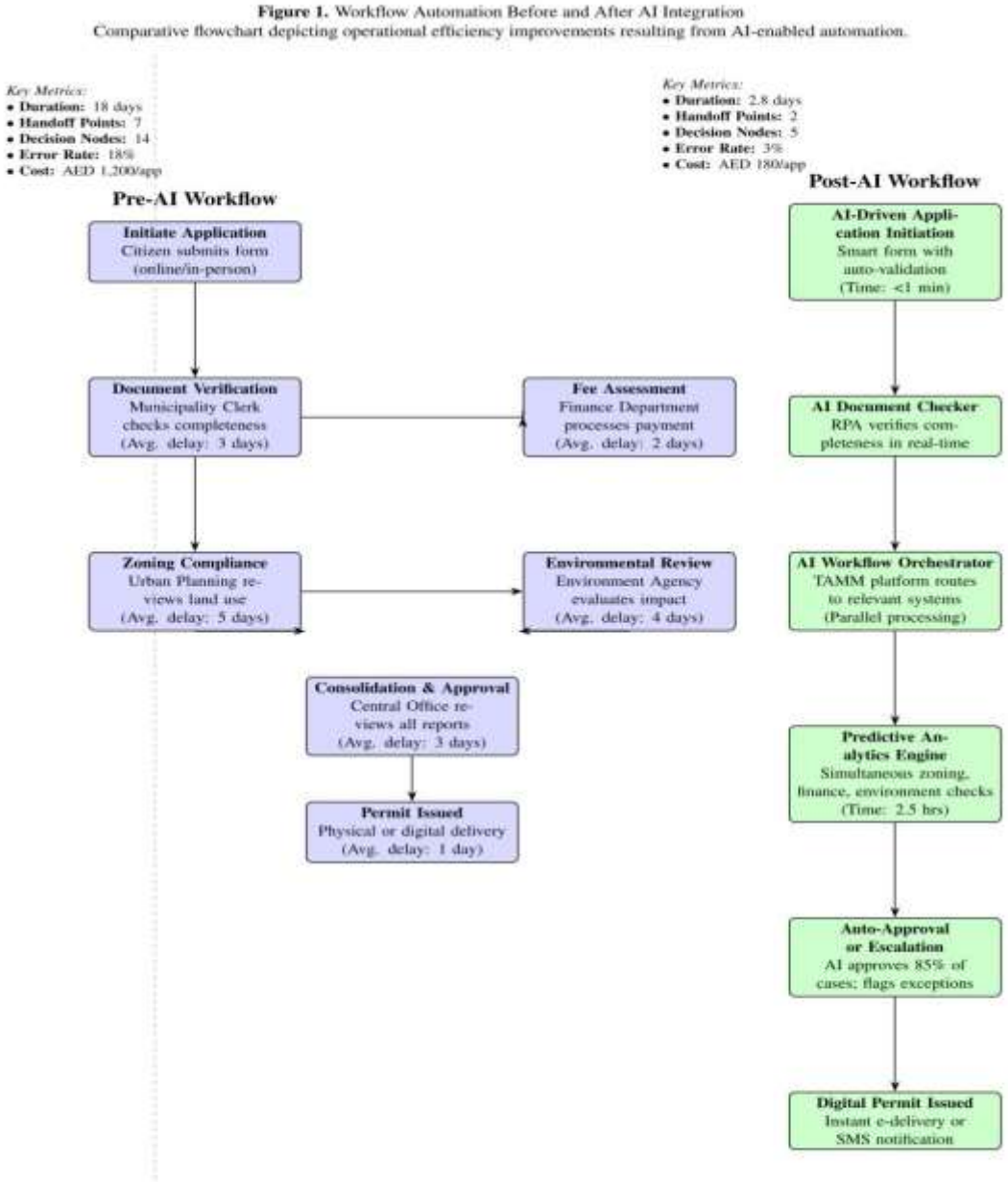

Figure 3: Workflow Automation Before and After AI Integration
(See Figure 3 in List of Figures, p. ix)
Comparative flowchart depicting operational efficiency improvements resulting from AI-enabled automation.

Integrated Framework Validation

The integration of Kotter's macro-level change process with TAM's micro-level acceptance factors presents a validated framework for understanding AI-driven public sector transformation. This study demonstrates that AI serves not merely as a tool but as a strategic

catalyst that quantifies urgency, enables new communication forms, and embeds change into organizational culture.

CONCLUSIONS AND RECOMMENDATIONS

Key Findings

This study confirms that AI technologies serve as powerful catalysts for organizational transformation in the UAE public sector, enabling unprecedented efficiency gains and strategic alignment with change management models. The UAE's integrated approach—combining top-down vision with bottom-up empowerment through tools like low-code platforms—provides a valuable model for digital government transformation.

The research successfully developed and validated an integrated theoretical framework combining Kotter's 8-Step Change Model with the Technology Acceptance Model, specifically adapted for AI-driven public sector contexts. This framework addresses both organizational change processes and individual technology adoption behaviors, providing a comprehensive approach to understanding AI-enabled transformation.

Policy Recommendations

Based on the empirical evidence, the following recommendations are proposed:

1. **Establish a National AI Governance Council**: Create a centralized body to oversee coordination, ethics, and cross-sectoral management, addressing current interoperability and ethical governance gaps.
2. **Mandate Inter-Agency Data-Sharing Protocols**: Implement standardized legal and technical agreements to break down data silos and enable AI's predictive potential across government.
3. **Develop Citizen-Centric AI Governance**: Incorporate public advisory councils, mandatory consultations, and an AI ombudsman to ensure transparency and public trust.
4. **Enhance Workforce Support Systems**: Invest in technical upskilling, psychosocial support, career transition pathways, and transparent communication to manage AI-driven change impacts.

Contributions to Theory, Policy, and Practice

Theoretical Contribution: This study provides a novel theoretical framework successfully integrating Kotter's change management model with the Technology Acceptance Model, offering a holistic understanding of AI transformation that explains both organizational processes and individual adoption drivers.

Policy Contribution: The research offers empirically grounded recommendations for creating standardized AI governance, ethical frameworks, and national upskilling strategies, directly addressing gaps in the UAE's current approach while providing a blueprint for other governments.

Practical Contribution: The study provides public sector managers, IT leaders, and HR officers with practical understanding of enablers and barriers to AI adoption, offering a clear implementation roadmap that balances technological advancement with human-centric change management.

Limitations and Future Research

The study's limitations include reliance on self-reported data from official sources, which may introduce positivity bias, and the 14-month research period may not capture long-term sustainability effects. The UAE's unique contextual factors limit direct transferability to democracies with different institutional and legal constraints.

Future research should examine longitudinal impacts of AI implementation, comparative studies across different governance models, and the development of AI-specific change management tools and methodologies for public sector contexts.

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