

REVIEWER'S REPORT

Manuscript No.: IJAR-59183

Title: AI-Driven Advanced Decision Management for Intelligent Government Services in Saudi Arabia: A Real-Time, Explainable and Policy-Aware Decisioning Framework for Vision 2030.

Recommendation:

Accept as it is
Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Id: JPR-286

Reviewer's Comment for Publication.

The manuscript addresses a timely and significant topic concerning the application of artificial intelligence to intelligent government services in Saudi Arabia. It presents a policy-aware decision-management perspective that integrates artificial intelligence models, machine-readable policy rules, explainability, human authorisation, evidence preservation, and continuous monitoring. The manuscript appropriately moves beyond the concept of AI as a stand-alone prediction tool and considers AI as one component of a governed administrative decision process.

The manuscript has a clear conceptual focus and establishes four specific objectives: identifying design requirements for real-time AI decisioning, examining explainability and human oversight, analysing the relationship between adaptive models and authoritative policy rules, and developing a lifecycle framework incorporating monitoring, appeal, correction, and controlled learning. The authors also clearly identify the work as a review-based conceptual contribution rather than an empirical evaluation of a deployed Saudi system.

The review methodology is reasonably well structured. The authors define five concept groups, specify a 2020–2025 literature window, provide inclusion and exclusion criteria, describe a three-stage synthesis process, and identify four analytical control domains. The quality appraisal considers publication credibility, methodological clarity, public-sector relevance, and DOI traceability, with 30 references retained.

A major strength of the manuscript is its integration of technical and administrative dimensions. The distinction between predictive models and decision authority is particularly relevant to government applications. The manuscript explains that models may provide predictions while rules, eligibility conditions, authorisation requirements, and human oversight determine how those predictions can appropriately contribute to an administrative decision.

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The discussion of explainability is also valuable. The proposed separation of citizen-facing, caseworker, governance, and technical explanations provides a useful conceptual structure and recognises that different stakeholders require different forms of explanation. The manuscript also appropriately connects transparency with contestability, correction, review, and accountability rather than treating transparency as merely the disclosure of technical information.

The Saudi-specific context is another important contribution. The manuscript considers data integrity, infrastructure, management alignment, national culture and language, security, privacy, trust, organisational readiness, and governance. It also proposes a federated approach in which common decision-management components can be shared while substantive rules and decisions remain under the responsibility of relevant government entities.

The proposed six-capability framework is coherent and practically relevant. It includes event and case intelligence, decision orchestration, policy execution, model intelligence, explainability and human authorisation, and evidence and learning. The lifecycle approach further strengthens the framework by connecting sensing, validation, decisioning, explanation, authorisation, execution, and learning. The following minor revisions are recommended before publication:

1. **Strengthen the literature-search methodology.** The manuscript identifies five search concept groups and the inclusion/exclusion criteria, but it does not provide sufficient information about the databases or search platforms used, exact search strings, search dates, initial numbers of retrieved records, screening procedures, or numbers of excluded studies. Adding these details would improve the reproducibility and methodological transparency of the review.
2. **Clarify the distinction between literature-derived findings and the authors' proposed framework.** The manuscript moves appropriately from literature synthesis toward a conceptual framework, but the transition should be made more explicit. Statements supported directly by existing studies should be clearly distinguished from recommendations, design principles, and framework components proposed by the authors.
3. **Further strengthen the Saudi-specific evidence base.** The manuscript itself acknowledges that several influential studies originate from jurisdictions with legal and administrative traditions different from Saudi Arabia and that local validation remains necessary. The authors should ensure that recommendations specifically directed toward Saudi government services are clearly identified as evidence-based findings, contextual adaptations, or conceptual proposals.
4. **Clarify the legal status of machine-readable rules.** The discussion appropriately states that human-readable policy should remain authoritative while executable rules should be treated as controlled artefacts derived from it. This important distinction could be developed further, particularly concerning interpretation, exceptions, effective dates, conflicts between rules, and responsibility for approving changes.
5. **Provide greater operational detail for human oversight.** The manuscript proposes risk-based human authorisation and identifies thresholds, escalation triggers, override reasons, and authorisation records. A concise table specifying possible low-, medium-, and high-risk decision pathways would make this component of the framework more practically applicable.
6. **Clarify validation of the proposed framework.** The framework is conceptual and has not yet been tested against service-level outcomes, appeals, caseworker behaviour, Arabic-language explanation quality, or cross-agency interoperability. This limitation is appropriately acknowledged, but the manuscript should consistently distinguish the proposed framework from an empirically validated implementation.
7. **Improve the presentation of Figures 1 and 2 and Table 2.** Because the framework is a central contribution, the figures should be publication-quality, clearly labelled, and sufficiently detailed

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for readers to understand the relationships among data, models, policy rules, human authorisation, execution, and learning. Table 2 should also be checked for formatting and alignment in the final manuscript.

8. **Strengthen the discussion of Arabic-language implementation.** The research agenda appropriately identifies the need to test explanations in Arabic as well as English. Given the Saudi context, the manuscript could briefly clarify the implications of Arabic-language variation for explanation quality, natural-language processing, citizen comprehension, and policy interpretation.
9. **Clarify the proposed monitoring and evaluation indicators.** The manuscript identifies useful measures such as decision latency, outcome quality, explanation completeness, override rate, appeal rate, policy exceptions, drift, fairness indicators, reversibility, and time to correction. A concise consolidated performance framework would improve the practical contribution of the paper.
10. **Correct the conflict-of-interest declaration.** The declarations section currently states that the authors should insert the appropriate conflict-of-interest declaration before submission. This should be completed with the journal's required declaration rather than left as an instruction to the authors.
11. **Perform a final language and reference-format check.** Minor formatting, line-break, numbering, and typographical inconsistencies should be corrected. The reference list should also be checked for consistency in journal titles, volume/issue information, page ranges, DOI formatting, and completeness.

Overall, the manuscript provides a coherent and relevant conceptual synthesis of AI-driven decision management for intelligent government services in Saudi Arabia. Its integration of real-time decisioning, explainability, policy execution, human authorisation, governance, and continuous monitoring gives the work both conceptual and practical relevance. The proposed framework is clearly structured, while the limitations appropriately acknowledge the absence of empirical validation in deployed Saudi government systems.

Recommendation: Accept after minor revision, subject particularly to strengthening methodological transparency, clarifying the boundary between evidence and conceptual proposal, improving the operationalisation and validation discussion, and completing the manuscript's declarations and final formatting.