

DOI: 10.5281/zenodo.122.126230

AN EMPIRICAL STUDY OF THE MUTUAL REINFORCEMENT OF GOVERNANCE, ARTIFICIAL INTELLIGENCE, AND ETHICAL MANAGEMENT

Taoufik Radouche^{1*}

¹College of Business Administration - Dar Al Uloom University, Riyadh, Saudi Arabia. taoufik@dau.edu.sa

Received: 20/12/2025
Accepted: 30/01/2026

Corresponding Author: Taoufik Radouche
(taoufik@dau.edu.sa)

ABSTRACT

Although AI has progressed from experimental pilots to mission-critical infrastructure, its emphasis on measurable performance has often marginalized governance and ethical imperatives – underscoring the need to steer AI toward transparency, accountability, legitimacy, fairness, and societal alignment. This research theorizes and empirically validates a triadic dynamic among governance frameworks, ethical management practices, and AI systems within organizations. Governance not only enables safe, scalable AI integration but is reinforced by AI's complexity and accountability demands; ethical management serves as both a normative foundation and a strategic capability that AI operationalizes; and AI functions simultaneously as a governed artifact and a governance-enabling technology. A two-stage design was employed: a systematic literature review to derive hypotheses on governance–ethics–AI interdependencies, followed by an empirical survey of private-sector managerial leaders in Saudi Arabia. Hypotheses were tested using multiple linear regression with measurement validation in SPSS (v26). Results confirm robust mutual reinforcement: structured AI governance accelerates safe, transparent deployment; governance institutionalizes ethical norms; ethics-by-design enables value-aligned adoption; and AI capabilities operationalize ethics and strengthen governance. These findings advance socio-technical systems theory by challenging linear, siloed models and demonstrating that organizational resilience emerges from deliberate orchestration of governance, ethics, and AI.

KEYWORDS: Governance Frameworks, Ethical Management, Artificial Intelligence, Mutual Reinforcement, Socio-technical systems; Co-evolution, Private Sector, Saudi Arabia.

1. INTRODUCTION

Artificial Intelligence (AI) has transitioned from experimental pilots to mission-critical infrastructure, permeating economic, social, cultural, and environmental domains. Its integration into governance processes enables repeatable, transparent, and accessible decision-making, mitigating economic, environmental, and security risks while reducing reliance on intuition or incomplete data. Conversely, governance frameworks shape AI's design and trajectory, stabilizing and accelerating adoption while ensuring safety, compliance, and trust—thus fostering sustainable innovation. Despite these synergies, AI systems remain predominantly optimized for quantifiable objectives such as accuracy, precision, latency, and cost. While these metrics are easily measurable, they often fail to capture broader ethical considerations, creating risks of misalignment and misconduct. This underscores the need for ethical norms and behaviour-based evaluations. Ethical management practices therefore play a pivotal role in guiding AI development and deployment toward transparency, fairness, and accountability, ensuring integrity and sustainable outcomes. Governance processes reinforce these principles by embedding ethical reviews, enforcing technical safeguards, and cultivating a culture where ethics inform AI innovation.

This paper investigates the mutual reinforcement among governance frameworks, ethical management practices, and AI systems within organizational contexts. Specifically, it examines how these dimensions reciprocally interact to enable trustworthy, scalable, and ethically aligned AI adoption.

To address this objective, the study employs a two-stage approach: systematic literature review to synthesize conceptual and empirical insights and derive hypotheses concerning governance–ethics–AI interdependencies. Empirical Analysis using survey data from managerial leaders in Saudi Arabia's private sector, providing evidence on how governance and ethical management practices shape AI implementation and vice versa.

2. LITERATURE REVIEW

As AI becomes mission-critical, organizations implement governance frameworks and ethical oversight to ensure fairness, transparency, and accountability. This integration requires three interdependent dimensions: (i) operationalizing ethical management practices and AI systems through governance structures, (ii) embedding

ethical principles within governance and AI systems, and (iii) leveraging AI as an enabler of governance and ethical management.

2.1. Operationalizing Ethical and AI through Governance Frameworks

Achieving ethical AI requires structured, repeatable governance processes that integrate risk management, accountability, transparency, and cultural alignment. First, risk-based categorization of AI use cases—low, moderate, or high impact—enables proportional safeguards; high-risk applications should undergo formal impact assessments, external audits, and human oversight, consistent with NIST's AI Risk Management Framework (NIST, 2023). Second, clear roles and accountability across Product, Data Science, Compliance, and Executive Sponsors can be formalized using a RACI matrix, linking responsibilities to measurable business outcomes for transparency and rapid issue resolution (Engel & Duske, 2025). Third, standardized documentation—including datasheets for datasets (Gebu et al., 2018) and model cards for AI systems (Mitchell et al., 2019)—ensures auditability and knowledge transfer. Fourth, ethical reviews embedded across the AI lifecycle—from ideation to post-deployment monitoring—help identify and mitigate risks early. Fifth, technical guardrails such as explainability tools, bias mitigation, robustness testing, and privacy safeguards strengthen trustworthiness (Jobin et al., 2019). Finally, ethical culture and human development must complement technical controls, positioning ethics as a proactive governance mechanism rather than a compliance burden (Floridi & COWLS, 2022).

2.2. Ethical Management Responsibilities in AI and Governance

Ethical management is essential for ensuring fair, transparent, and safe AI systems, requiring oversight in five key areas. Bias and Fairness: AI models can perpetuate societal biases, necessitating diverse datasets, bias testing, and remediation protocols (Venkatasubbu et al., 2022; ISO 42001, 2025). Explainability and Transparency: Opaque models undermine trust; explainability tools and thorough documentation are critical for accountability (Methuku et al., 2023). Privacy and Security: Privacy-by-design principles—such as data minimization, encryption, and consent frameworks—are vital for compliance and trust (Corrales Compagnucci et al., 2025; Kodakandla, 2024). Human Oversight: In high-risk contexts, human-in-the-loop mechanisms and

rollback protocols maintain accountability (Frenette, 2023; EU AI Act, 2026). Sustainability and Social Impact: Ethical management integrates energy efficiency and carbon metrics while assessing social impacts like employment displacement and bias (Ong et al., 2022; Bansal, 2025).

2.3. AI as an Enabler of Ethical Management and Governance

AI serves as a force multiplier for ethical management by automating compliance, enhancing oversight, and supporting ethical decision-making. Compliance automation uses Natural Language Processing (NLP) and machine learning to analyse policies and audit trails, flagging non-compliance and prioritizing high-risk cases (Al Dajeh, 2024). Continuous monitoring leverages behavioural analytics to detect fraud, conflicts of interest, and safety violations, enabling early intervention (Jobin et al., 2019). Ethical risk modelling combines structured and unstructured data to predict risk hotspots, guiding training and leadership attention (Floridi & Cowls, 2019). AI also supports ethical decision-making by helping leaders balance trade-offs between efficiency, fairness, and integrity (Zhao, 2024). Finally, embedding ethical behaviours through AI governance enhances legitimacy, reduces corruption, and strengthens stakeholder trust (Papagiannidis, 2025).

Literature review analysis indicates that achieving governed and ethically aligned AI adoption requires an integrated approach that combines governance frameworks, ethical management practices, and AI-driven systems. Governance frameworks establish accountability and transparency, while ethical management addresses fairness, privacy, and sustainability. AI amplifies these efforts through compliance automation, monitoring, and risk modelling, transforming ethics and governance into strategic levers for trust and long-term resilience.

3. RESEARCH MODEL AND HYPOTHESIS

In accordance with the literature review, Figure 1 illustrates the research model. This study analyses the mutual reinforcement of governance frameworks with AI [H1], governance frameworks with ethical management [H2], and ethical management with AI [H3]. It was hypothesized that governance, AI, and ethical management would be related over time. There were a series of hypotheses of specificity relating to these relations:

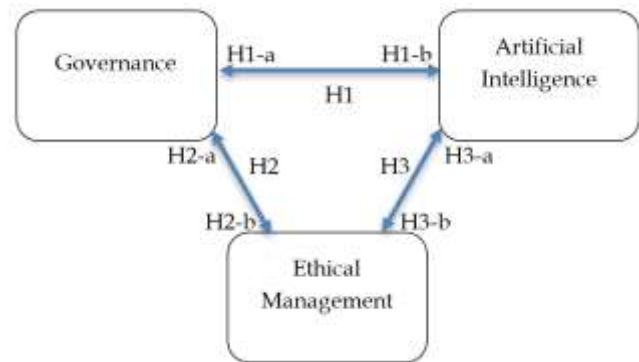


Figure 1.: Research Model.

H1-a: The integration of strong AI technologies positively influences the organizational governance frameworks.

This hypothesis posits that the implementation of AI systems fosters the establishment of effective governance systems by supporting ethical decision-making, enhancing legitimacy, and mitigating risks.

H1-b: Strong governance frameworks positively influence the effective adoption of AI technologies within organizations.

The assumption is that effective implementation of governance processes—through clearly defined roles and accountability, established risk categories, and standardized documentation—positively influences the successful implementation of AI systems.

H2-a: The adoption of strong ethical management practices positively impacts the effectiveness of governance frameworks within organizations.

This assumption posits that organizations with established ethical management practices adopt governance frameworks to mitigate algorithmic bias and ensure fairness in machine learning systems, while simultaneously enhancing explainability and transparency.

H2-b: Strong governance frameworks positively influence the implementation of ethical management practices within organization.

This assumption holds that the adoption of governance frameworks drives the implementation of ethical management by integrating ethical reviews into the lifecycle, establishing technical guardrails, and promoting ethical human development along with training.

H3-a: The development of strong ethical management positively influences the implementation of AI systems.

This hypothesis posits that the strengthening of ethical management practices contributes to the implementation of advanced AI systems by enabling privacy and security safeguards, supporting critical-context analysis and human oversight, and

promoting sustainability and social impact considerations.

H3-b: The integration of AI systems within organizational processes positively impacts the development of ethical management practices.

This hypothesis posits that the successful implementation and responsible utilization of AI systems enable the development of strong ethical management practices. Such practices achieve this by embedding compliance automation, facilitating continuous monitoring and early-warning mechanisms, and integrating ethical risk modelling into organizational decision-making processes.

This study introduces a comprehensive model that integrates governance, ethical management, and artificial intelligence (AI), as depicted in Figure 1. Although previous research has examined these components individually, their reciprocal and interactive relationships remain largely theoretical and lack empirical validation. To date, no study has simultaneously investigated all three dimensions and their combined effects. Furthermore, while experts acknowledge AI’s potential to enhance organizational governance, research on its ethical management aspects remains limited and underexplored. AI governance is an emerging and fragmented field characterized by significant gaps – especially regarding the operationalization and practical application of ethical principles within organizational contexts (Birkstedt et al., 2023). Accordingly, this study seeks to address these gaps and advance knowledge in this area.

4. METHODS

Managers from various private sectors in Saudi Arabia participated in this study. Out of 124

distributed survey questionnaires (each containing 10 items), 97 were returned. Sixteen responses were excluded due to significant missing data, leaving 81 valid responses, representing a 65% response rate. Participants represented diverse sectors such as education & training, healthcare and medical, transport and logistics, environment services energy, and agriculture and food, with managerial levels ranging from middle to senior leadership. Among these respondents, 63% were male and 37% female. Regarding education, 38% held a master’s degree, 51% a bachelor’s degree, and 11% a diploma or lower qualification. Age distribution was as follows: under 30 years (12%), 30–40 years (17%), 41–50 years (60%), and over 50 years (11%). In terms of work experience, 23% had 1–3 years, while 77% had more than 3 years of experience.

In this study, measurement items derived from an extensive literature review were utilized to explore the reciprocal relationships among Governance (GOV), Ethical Management (ETH), and Artificial Intelligence (AI). Respondents indicated their agreement with each statement using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (see Table 1). Hypotheses were tested through multiple linear regression, and the measurement model’s convergent and discriminant validity were assessed using SPSS version 26 (IBM, Armonk, NY, USA). Additionally, Pearson correlation analysis was employed to measure the interrelationships among Gov, ETH, and AI. Descriptive statistics, including means and standard deviations, are reported in Table 2. The relatively low standard deviations suggest that the data points are tightly clustered around the mean, indicating strong reliability.

Table 1: Convergent Validity.

Variable relationships	Items	Factor Loading	α	CR	AVE
Governance					
GOV → AI H1-b	-Roles and responsibilities for AI implementation are clearly defined in our organization	0.864	0.822	0.851	0.870
	-Our organization has clearly defined risk categories for AI systems.	0.875			
	-Standardized documentation is required for all AI-related processes and decisions in our organization.	0.846			
GOV →ETH H2-b	-Our governance framework requires ethical reviews at key stages of AI development and deployment.	0.943			
	-Our governance framework includes technical safeguards to prevent unethical AI behaviour.	0.915			
	-Our governance framework requires regular training on ethical AI practices for all employees.	0.901			
Ethical Management					
ETH → GOV H2-a	-Our organization has a governance framework that explicitly addresses algorithmic fairness.	0.925	0.795	0.801	0.813
	-Our organization's governance framework requires explainability for AI models used in decision-making.	0.902			
ETH → AI H3-a	-Our ethical management practices include measures to ensure robust privacy safeguards in AI systems.	0.781			

	-Our ethical management practices ensure that AI decisions are subject to human review in critical contexts.	0.766			
	-Our governance framework includes guidelines for assessing the social impact of AI systems.	0.784			
Artificial Intelligence			0.701	0.726	0.754
AI → GOV H1-a	-Our AI systems help ensure ethical decision-making in our organization.	0.874			
	-AI implementation has strengthened the perceived legitimacy of our actions in relation to laws, standards, and certifications.	0.845			
	-Our AI systems help detect emerging risks earlier than traditional methods.	0.817			
AI → ETH H3-b	-AI systems in our organization effectively automate compliance checks.	0.798			
	-AI systems in our organization provide continuous monitoring for ethical and operational risks.	0.742			
	- AI systems in our organization incorporate ethical risk assessments into decision-making processes.	0.703			

Table 2. Means and Standard Deviations of Variables.

	GOV	ETH	AI
Mean	4.011	3.871	3.986
Std. Deviation	0.697	0.578	0.657

The validity of the measurement model was evaluated through two key dimensions: convergent validity and discriminant validity. Convergent validity was assessed by computing Cronbach’s alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE), alongside examination of item factor loadings. Discriminant validity was determined using the Fornell-Larcker criterion, which involves comparing the square root of each construct’s AVE with its correlations to other constructs.

Convergent validity was established by verifying that factor loadings exceeded the recommended threshold of 0.70 (Hair et al., 2011). As shown in Table 1, all items met this criterion and were therefore retained in accordance with established guidelines (Chin, 2010). Furthermore, Table 3 indicates that all constructs demonstrated satisfactory internal consistency, with Cronbach’s alpha values exceeding 0.70 (Joseph et al., 2010), and Average Variance Extracted (AVE) values surpassing the recommended minimum of 0.50 (Hair et al., 2011).

Table 3: Discriminant Validity.

	GOV	ETH	AI
GOV	0.821		
ETH	0.798	0.813	
AI	0.765	0.776	0.804

As shown in Table 3, the square root of the Average Variance Extracted (AVE) for each latent construct exceeds its correlations with other constructs in the corresponding column. This result confirms that the measurement model satisfies the Fornell-Larcker criterion, indicating adequate discriminant validity.

5. RESULTS AND DISCUSSION

Table 4: Multiple Correlation Results.

Variable relationships	β Value	p-Value	Hypothesis Test
ov → AI	0.601	$p < 0.001$	Accepted H1-b
Gov → ETH	0.625	$p < 0.001$	Accepted H2-b
ETH → Gov	0.617	$p < 0.001$	Accepted H2-a
ETH → AI	0.578	$p < 0.001$	Accepted H3-a
AI → Gov	0.552	$p < 0.001$	Accepted H1-a
AI → ETH	0.561	$p < 0.001$	Accepted H3-b

The relationships among the model variables are summarized in Table 4. GOV demonstrates a statistically significant and positive association with AI adoption ($\beta = 0.601, p < 0.001$), indicating that robust governance frameworks substantially facilitate the effective integration of AI technologies within organizations. Accordingly, Hypothesis H1-b is fully supported. Conversely, AI exhibits a significant positive effect on GOV ($\beta = 0.552, p < 0.001$), suggesting that advanced AI capabilities contribute to strengthening organizational governance structures. Thus, Hypothesis H1-a is also fully supported. These findings confirm the presence of mutual causality between GOV and AI, as reflected in the model outcomes.

GOV exhibits a statistically significant and positive association with ETH ($\beta = 0.625, p < 0.001$), indicating that robust governance frameworks substantially enhance the implementation of ethical management practices within organizations. Accordingly, Hypothesis H2-b is fully supported. Conversely, ETH demonstrates a significant positive effect on GOV ($\beta = 0.617, p < 0.001$), suggesting that the adoption of strong ethical management practices contributes to improving governance effectiveness. Thus, Hypothesis H2-a is also fully supported. These results confirm the existence of mutual causality between GOV and ETH, as evidenced by the model outcomes.

ETH demonstrates a statistically significant and positive association with AI ($\beta = 0.578, p < 0.001$),

indicating that the development of robust ethical management practices substantially facilitates the implementation of AI systems within organizations. Accordingly, Hypothesis H3-a is fully supported. Conversely, AI exerts a significant positive effect on ETH ($\beta = 0.561$, $p < 0.001$), suggesting that the integration of AI technologies into organizational processes contributes to strengthening ethical management practices. Thus, Hypothesis H3-b is also fully supported. Collectively, these findings confirm the presence of mutual causality between ETH and AI, as evidenced by the model results.

5.1. Mutual Reinforcement of Governance and AI

The empirical results corroborate Hypothesis H1-b, indicating that organizations implementing robust AI governance frameworks—encompassing risk management, defined roles and accountability, and standardized documentation—achieve faster, safer, and more scalable integration of AI technologies compared to those relying on ad hoc approaches. This finding is consistent with prior research on AI governance (NIST, 2023; ISO 42001, 2025), which demonstrates that structured oversight mitigates technical, operational, and socio-ethical risks across the AI lifecycle, thereby accelerating AI deployment into production environments, fostering stakeholder trust, and enhancing organizational performance. Conversely, the results corroborate Hypothesis H1-a, demonstrating that advanced AI capabilities serve as a catalyst for strengthening organizational governance structures. This reinforcement occurs through multiple mechanisms, including the facilitation of ethical and transparent decision-making, enhancement of organizational legitimacy, and improved risk management practices. These effects are driven by the complexity and accountability requirements inherent in AI systems, which require organizations to institutionalize formal oversight, compliance protocols, and accountability frameworks. The findings align with prior research on governance adaptation in response to technological sophistication, which consistently shows that AI integration enhances corporate oversight by improving decision quality, transparency, and accountability (Ibikunle, 2024; Correia & Água, 2023; Batool et al., 2025). This suggests a co-evolutionary dynamic wherein technological advancement and governance maturity reinforce each other, positioning AI not only as a governed technology but also as a driver of governance transformation.

The results corroborate Hypotheses H1-a and H1-

b, demonstrating a positive mutual reinforcement between organizational governance and advanced AI capabilities. Specifically, governance frameworks not only facilitate the effective integration of AI technologies, but advanced AI capabilities also act as a catalyst for strengthening governance structures. This mutual relationship supports the co-evolutionary perspective in socio-technical systems theory, indicating that technological sophistication and governance maturity reinforce each other.

5.2. Mutual Reinforcement of Governance and Ethical Management

The empirical findings strongly support Hypothesis H2-b, demonstrating that robust governance frameworks play a pivotal role in advancing the implementation of ethical management practices. These frameworks embed ethical considerations throughout organizational processes, establish rigorous control mechanisms, and align human development priorities with emerging technological governance, including AI ethics. Evidence from internationally recognized standards such as ISO 37001 and COSO confirms that organizations with well-structured governance systems exhibit significantly fewer ethical violations and achieve higher compliance maturity. This underscores governance as a foundational enabler for translating normative ethical principles into consistent, operationalized practices across the organizational lifecycle. Conversely, the results indicate that adopting strong ethical management practices significantly enhances governance effectiveness by reinforcing fairness, explainability, and transparency (H2-a). Empirical evidence from ISO 37001 and COSO-based studies confirms that organizations with mature ethics programs exhibit more reliable internal controls and fewer governance failures, highlighting ethics as a strategic driver of governance performance rather than a peripheral compliance measure.

The results corroborate Hypotheses H2-a and H2-b, demonstrating a positive mutual reinforcement between governance and ethical management. This finding is consistent with prior literature emphasizing that governance frameworks provide structural oversight and accountability mechanisms that institutionalize ethical norms (OECD, 2023), while ethical management practices reinforce governance effectiveness by fostering transparency, reducing misconduct risk, and strengthening cultural alignment (Kaptein, 2019; Müller, 2013). Together, these elements operate as interdependent pillars of organizational resilience, amplifying each other to

achieve sustainable performance, regulatory compliance, and stakeholder trust—an outcome widely supported in governance and ethics research.

5.3. Mutual Reinforcement of Ethical Management and AI

The findings suggest that robust ethical management practices serve as a strategic enabler for successful AI implementation within organizations (H3-a). By embedding principles such as privacy and security, human oversight in critical contexts, and sustainability considerations, these practices create an ethical context environment that mitigates risks associated with algorithmic bias, data misuse, and societal impact. Empirical evidence from ISO 37001 and COSO-based governance models reinforces this relationship, indicating that ethics-driven structures not only reduce reputational and legal exposure but also streamline AI integration by aligning technological deployment with organizational values and regulatory expectations. Conversely, the findings indicate that integrating AI technologies into organizational processes strengthens ethical management practices (H3-b) by enabling compliance automation, continuous monitoring, and predictive risk modelling. This aligns with prior research on responsible AI governance, which emphasizes AI's role in operationalizing ethical principles through algorithmic auditing and bias detection (Floridi & Cowls, 2019; Jobin et al., 2019). Empirical evidence from ISO 37001 and COSO-based models supports this relationship, showing that AI-driven compliance systems enhance ethical performance and governance maturity, positioning AI as a strategic complement to ethics-driven governance.

The results corroborate Hypotheses H3-a and H3-b, demonstrating a positive mutual reinforcement between ethical management and AI. Ethical management frameworks establish the principles and governance structures essential for responsible AI development, while AI capabilities enhance ethical management through improved oversight and risk mitigation. This mutual relationship, consistent with literature on responsible AI governance and organizational ethics (Floridi & Cowls, 2019; Jobin et al., 2019), positions ethics and AI as mutually reinforcing pillars of organizational resilience, fostering sustainable innovation and stakeholder trust.

6. CONCLUSION

This research advances socio-technical systems theory by demonstrating a triadic, reciprocal

dynamic among governance, ethical management, and AI systems, challenging linear models that treat these constructs as isolated or unidirectional.

The theoretical findings indicate that governance frameworks not only enable safe and scalable AI integration but are reinforced by AI's complexity and accountability demands, while ethical management serves as both a normative foundation and a strategic capability that AI systems help operationalize through automation and oversight. Artificial Intelligence is simultaneously conceptualized as a governed artifact and as a governance-enabling technology, capable of operationalizing ethical management practices. Governance frameworks provide structural oversight and accountability mechanisms that institutionalize ethical management practices, while mature ethical management reinforces governance effectiveness.

This co-evolutionary perspective positions governance, ethics, and AI as mutually reinforcing pillars of organizational resilience, offering an integrative lens to explain how technological sophistication, institutional governance, and ethical maturity converge to drive transparency, accountability, sustainable innovation, legitimacy, and trust. Empirically, the study utilized survey data from managers in Saudi Arabia's private sector, with hypotheses tested through multiple linear regression and measurement validity assessed using SPSS (v26). The results confirm robust, mutual reinforcement among governance, ethical management, and AI systems: structured AI governance accelerates safe and scalable integration; AI's complexity strengthens governance structures; governance institutionalizes ethical norms; and ethics-by-design enables value-aligned AI deployment, while AI operationalizes ethics through compliance automation and algorithmic auditing. Together, these findings substantiate a co-evolutionary dynamic within socio-technical systems, where governance maturity, ethical management, and AI capabilities are not merely complementary but mutually reinforcing and jointly constitutive of organizational resilience.

In sum, this study demonstrates that organizations do not merely govern AI; they simultaneously strengthen governance and ethics through AI, and vice versa. The most resilient enterprises are those that deliberately design the interplay among governance, ethics, and AI—transforming compliance into capability and capability into sustained, trustworthy innovation. Embracing this co-evolutionary perspective enables both researchers and practitioners to move beyond control-centric narratives toward a systems-level

understanding of how organizations scale AI responsibly, ensuring transparency and accountability while advancing legitimacy, fairness, and sustainability.

ACKNOWLEDGEMENTS: This research was supported by the General Directorate of Scientific Research & Innovation, Dar Al Uloom University, through the Scientific Publishing Funding Program.

REFERENCES

- Al Dajeh, B. M. (2024). Artificial Intelligence Governance. *Journal of Ecohumanism*, 3(4), 300–313. <https://doi.org/10.62754/joe.v3i4.3515>
- Bansal, C. (2025) AI ethics and sustainability: Accelerating paradigm shifts toward sustainable development. *Journal of Strategy & Innovation*, 36(1), 200537. <https://doi.org/10.1016/j.jsinno.2025.200537>.
- Batool, A., Zowghi, D. and Bano, M. (2025) AI governance: a systematic literature review. *AI and Ethics*, Vol. 5, 3265–3279. <https://doi.org/10.1007/s43681-024-00653-w>
- Birkstedt, T., Minkkinen, M., Tandon, A., Mäntymäki, M. (2023) AI governance: themes, knowledge gaps and future agendas. *Internet Research*, (33) 7, 133–167. <https://doi.org/10.1108/INTR-01-2022-0042>
- Chin, W. W. (2010) How to write up and report PLS analyses. In: Esposito V. Vinzi, W. Chin, J. Henseler and H. Wang (eds) *Handbook of Partial Least Squares. Handbooks of Computational Statistics*. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-32827-8_29
- Compagnucci, M. C., Minssen, T. and Fenwick M. (2025). *AI-by-Design: Integrating Privacy, Security, and Ethical Governance in Health, Industry, and Society. Series: Perspectives in Law, Business and Innovation*. Springer Nature, Singapore.
- Correia, A. and Água, P. B. (2023) Artificial intelligence to enhance corporate governance: A conceptual framework. *Corporate Board: Role, Duties and Composition*, 19(1), 29–35. <https://doi.org/10.22495/cbv19i1art3>
- COSO (2017) *Compliance risk management: applying the COSO ERM Framework*. <https://www.coso.org/erm-framework>, accessed January 04, 2025.
- Engel, S. and Duske, K. (2025) AI Governance in Large-Scale Organizations: Who is Responsible for What?". *Proceedings of the conference AMCIS 2025, Montreal Canada, August 14-16, 2025*. https://aisel.aisnet.org/amcis2025/is_leader/is_leader/1
- EU AI Act (2026). Article 14: Human Oversight. *EU Artificial Intelligence Act*. <https://artificialintelligenceact.eu/article/14/>, accessed October 28, 2025.
- Floridi, L., and Cowls, J. (2019). A Unified Framework of Five Principles for AI in Society. *Harvard Data Science Review*, 1(1), 1–14. <https://doi.org/10.1162/99608f92.8cd550d1>
- Frenette, J. (2023) Ensuring Human Oversight in High-Performance AI Systems A Framework for Control and Accountability. *World Journal of Advanced Research and Reviews*, 20(2), 1507–1516. <https://doi.org/10.30574/WJARR.2023.20.2.2194>
- Gebru, T., Morgenstern, J., Vecchione, B., Wortman Vaughan, J., Wallach, H., Daumé III, H. and Crawford K. (2018) Datasheets for Datasets. *arXiv preprint arXiv:1803.09010*. <https://arxiv.org/abs/1803.09010>, accessed May 17, 2025.
- Hair, J. F., Ringle, C. M. and Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- ISO 37001 (2025) *Anti-bribery management systems – Requirements with guidance for use*. <https://www.iso.org/standard/37001>, accessed January 04, 2025.
- ISO 42001 (2025) *AI Governance Standard*. <https://www.onetrust.com/>, accessed January 04, 2025.
- Jide, I. (2024) Artificial Intelligence and Corporate Governance: Revolutionizing Oversight, Decision-Making, and Accountability. *International Journal of Academic Pedagogical Research (IJAPR)*, 8(9), 108–119. <http://ijeais.org/wp-content/uploads/2024/9/IJAPR240915.pdf>
- Jobin, A., Ienca, M. and Vayena, E. (2019) The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, Vol. 1, 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
- Joseph, F., Hair, Jr. G., Tomas, M., Hult, C., Ringle M. and Sarstedt, M. A. (2010) *Primer on partial least squares structural equation modeling (PLS SEM)*, 2nd ed. Sage Publications, Inc: Thousand Oaks, California.
- Kaptein, M. (2019) The moral entrepreneur: A new component of ethical leadership. *Journal of Business Ethics*, 156(4), 1135–1150. <https://doi.org/10.1007/s10551-017-3641-0>
- Kodakandla, P. (2024). Privacy-by-Design in AI Data Pipelines: A Unified Governance Approach. *Global*

- Journal of Engineering and Technology Advances, 21(01), 215–224. <https://doi.org/10.30574/gjeta.2024.21.1.0187>
- Margaret, M., Simone, W., Andrew, Z., Parker, B., Lucy, V., Ben, H., Elena, S., and Raji, I.D. and Gebru T. (2019) Model Cards for Model Reporting. Proceedings of the Conference on Fairness, Accountability, and Transparency, January 2019, pp. 220-229. <http://dx.doi.org/10.1145/3287560.3287596>
- Methuku, V., Kondaparthi, S. C. and Aunugu, D. R. (2023) Explainability and Transparency in Artificial Intelligence: Ethical Imperatives and Practical Challenges. International Journal of Electrical, Electronics and Computers, 8(4), 7–12. <https://dx.doi.org/10.22161/eec.84.2>
- Müller, R., Andersen, E. S., Kvalnes, Ø., Shao, J., Sankaran, S., Turner, J. R., Biesenthal, C., Walker, D. and Gudergan, S. (2013). The Interrelationship of Governance, Trust, and Ethics in Temporary Organizations. Project Management Journal, 44(4), 26–44. <https://doi.org/10.1002/pmj.21350>
- NIST (2023) AI Risk Management Framework. <https://www.nist.gov/itl/ai-risk-management-framework>, accessed September 17, 2025.
- OECD (2023), G20/OECD Principles of Corporate Governance 2023, OECD Publishing, Paris. <https://doi.org/10.1787/ed750b30-en>.
- Ong, H. L., Doong, R., Naguib, R., Lim, C. P. and Nagar, A. K. (2022) Artificial Intelligence and Environmental Sustainability. Series: Title Algorithms for Intelligent Systems, Springer Singapore.
- Papagiannidis, E., Mikalef, P. and Conboy, K. (2025) Responsible artificial intelligence governance: A review and research framework. The Journal of Strategic Information Systems, 34(2), 101885. <https://doi.org/10.1016/j.jsis.2024.101885>.
- Venkatasubbu, S. and Krishnamoorthy, G. (2022) Ethical Considerations in AI Addressing Bias and Fairness in Machine Learning Models. Journal of Knowledge Learning and Science Technology, 1(1), 130–138. <https://doi.org/10.60087/jklst.vol1.n1.p138>
- Zhao, J. (2024) Promoting more accountable AI in the boardroom through smart regulation. Computer Law & Security Review, Vol. 52, 105939. <https://doi.org/10.1016/j.clsr.2024.105939>.