Journal of Management and Science

16(1) 2026 59-64

OPEN ACCESS

RESEARCH ARTICLE

DOI: https://doi.org/10.26524/jms.16.7

A STUDY ON ETHICAL CONSIDERATIONS IN AI DEPLOYMENT

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Abstract

The rapid advancement and deployment of artificial intelligence (AI) systems have raised critical ethical considerations that must be addressed to ensure their responsible use. This article explores key ethical challenges in AI deployment, with a particular focus on fairness, transparency, and accountability. Fairness is central to preventing biases that can lead to discrimination and inequities in decision-making, while transparency is vital to fostering trust and enabling stakeholders to understand how AI systems make their decisions. Additionally, the article examines other ethical concerns, such as privacy, autonomy, and the potential for unintended harm, offering a comprehensive framework for addressing these issues. By critically evaluating current approaches and proposing best practices, the article aims to provide guidance for developers, policymakers, and organizations in deploying AI technologies that align with ethical principles and contribute to the well-being of society.

Keywords: Deployment, Artificial Intelligence (AI), Ethical Principle.

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How to cite this article: Dr. S. Sarumathi, A Study on Ethical Considerations in AI Development, Journal of Management and Science, 16(1) 2026 59-64. Retrieved from https://jmseleyon.com/index.php/jms/article/view/927

Received: 13 July 2025 **Revised:** 11 August 2025 **Accepted:** 15 October 2025 **Published:** 30 March 2026

1. INTRODUCTION

As artificial intelligence (AI) continues to evolve and integrate into nearly every aspect of modern life—from healthcare and finance to education and law enforcement—the need for ethical scrutiny has never been more urgent. While AI systems offer unprecedented efficiency, personalization, and predictive capabilities, they also raise complex ethical questions about privacy, fairness, accountability, and transparency. The deployment of AI technologies, if left unchecked, has the potential to reinforce societal biases, widen inequalities, and undermine fundamental human rights. This article explores the critical ethical considerations that must guide the responsible design, development, and deployment of AI systems, emphasizing the importance of aligning technological progress with societal values.

REVIEW OF LITERATURE

Ni Li (2023) in the article Ethical Considerations in Artificial Intelligence: A Comprehensive discussion from the Perspective of Computer Vision has analyzed that the development and application of ethical principles to ensure that AI technologies reflect societal values and uphold fairness, transparency, and accountability. It emphasizes the importance of cross-sector collaboration in establishing an ethical framework to guide the responsible deployment of AI, particularly in the field of computer vision. By embedding ethical awareness at the heart of technological advancement, this approach seeks to foster a mutually beneficial relationship between AI and society, ultimately serving the greater good of humanity.

Aaryan Gupta et al (2024) from the study Ethical Considerations in the Deployment of AI has

found that vital role of business leadership in fostering transparency, accountability, and the responsible use of AI technologies. It examines various ethical frameworks guiding AI deployment, alongside the potential risks associated with its use. The study also proposes strategies to mitigate these risks. Ultimately, it highlights the importance of placing ethical considerations at the forefront of AI integration to build trust, reduce harm, and ensure the long-term success of corporate leadership.

Konidena BK et al (2024) in the study titled Ethical Considerations in the Development and Deployment of AI Systems has studied that AI ethics continues to evolve due to the convergence of various factors, including the societal impact of technology and the need to effectively manage diverse stakeholder interests.

Nyachiro A et al, (2024) in the study titled Ethical Considerations in the Development and Deployment of AI-Powered Systems has found that Transparency, particularly through explainability, is repeatedly highlighted as essential for building trust in AI systems among all stakeholders. The study concludes that effectively addressing ethical concerns in AI development and usage requires a multidisciplinary approach—bringing together technological innovation, regulatory frameworks, and ethical considerations. It advocates for the creation of comprehensive policies and regulations to guide AI development, emphasizing the need for fairness and inclusivity in algorithm design. Additionally, the research stresses the importance of establishing robust oversight mechanisms to promote accountability and maintain transparency across the AI industry.

Carnegie Council for ethics in International Affairs (2025) in its article Ethical Considerations for the Future of Artificial Intelligence in Education (AIED) and Healthcare has said that Artificial intelligence (AI) offers transformative possibilities in fields like healthcare and education, with the ability to enhance patient care and tailor learning experiences to individual needs. However, it is essential to address the ethical challenges that come with these advancements. To ensure AI is used responsibly, we must actively work to prevent issues such as algorithmic bias, breaches of privacy, and unequal access to technology.

PetarRadanliev et al (2024) in the article titled Ethics and responsible AI deployment adopts a multidisciplinary approach to explore advanced algorithmic solutions such as differential privacy, homomorphic encryption, and federated learning, alongside international regulatory frameworks and ethical standards. The research concludes that these techniques effectively strengthen privacy protections while maintaining the usefulness of AI systems. It highlights the importance of integrating technological innovation with ethical and legal strategies to ensure that the power of AI is harnessed in a manner that respects and safeguards individual privacy.

UNESCO (2025) has stated that the rapid advancement of artificial intelligence (AI) has unlocked a wide range of global opportunities—from improving medical diagnoses and enhancing social connectivity to increasing labor efficiency through automation.

Yet, these swift developments also bring significant ethical challenges. AI systems have the potential to reinforce existing biases, contribute to environmental harm, and pose threats to human rights. These risks are not just theoretical; they are already intensifying existing social inequalities and disproportionately impacting marginalized communities.

Matthew G.Hanna et al (2025), in the article titled Ethical and Bias Considerations in Artificial Intelligence/Machine Learning has found that although AI applications offer significant potential, their implementation in daily medical practice presents important ethical challenges. Tackling issues related to ethics and bias in medicine requires a thorough evaluation process that spans the entire lifecycle of AI systems—from model development to clinical deployment. Identifying and mitigating these biases is essential to ensure that AI and machine learning (ML) technologies remain fair, transparent, and beneficial for all patients. This review focuses on the ethical and bias-related considerations specific to the use of AI and ML within the fields of pathology and medicine.

OBJECTIVES OF THE STUDY

- To investigate the awareness of AI users toward ethical concerns in AI systems.
- To examine how AI users perceive ethical issues related to the development and use of AI technologies.
- To identify key ethical challenges in AI

RESEARCH METHODOLOGY

A survey was conducted among AI users with questionnaire. Both primary and secondary data has been used for this research purpose. Convenient sampling technique was used to collect the data from 50 respondents as sample size from Puducherry. Respondents were AI users who are into Business, Technology, Education, Health Sciences and Law & Policy sector.

DATA ANALYSIS AND INERPRETATION

Awareness level of respondents

Table no 1

Variables	Percentage
Very Aware	28
Somewhat Aware	49
Slightly Aware	15
Not Aware at all	8

Source: Computed from Primary Data

Above table shows that 28% of respondents are very aware about the ethical concerns, whereas 49% of the respondents are somewhat aware of the same, 15% are slightly aware and 8% of respondents are not at all aware about ethical concerns in AI.

Field of Study/Work

Table no 2

Field of Study/Work	Percentage
Technology	28
Business	38
Education	18
Health Sciences	13
Law/Policy	3

Source: Computed from Primary Data

The analysis of the data reveals that a significant proportion of respondents (38%) belong to the Business field, indicating its prominence as the most chosen area of AI. The Technology field follows closely, accounting for 28% of the respondents. A notable 18% of respondents are engaged in the Education field, whereas Health Sciences comprises 13% of the sample. Finally, only 3% of the respondents fall under the Law/Policy field, making it the least represented domain in the study.

Sectors most affected by AI deployment

Table no 3

Sector	Percentage
Healthcare	28
Education	26
Finance	13
Retail and E-commerce	29
Law enforcement	2

Source: Computed from Primary Data

An analysis of the sector-wise distribution of respondents—namely Retail and E-commerce (29%), Healthcare (28%), Education (26%), Finance (13%), and Law Enforcement (2%)—reveals varying degrees of influence exerted by Artificial Intelligence (AI) across fields.

AI should be used only under strict ethical guidelines

Table no 4

Variables	Percentage
Strongly agree	59
Agree	18
Neutral	15
Disagree	3
Strongly Disagree	5

Source: Computed from Primary Data

A significant majority, 59% of respondents, strongly agree that AI should be used only under strict ethical guidelines. An additional 18% agree with the statement, bringing the total proportion of those in favor of ethical regulation to 77%. A further 15% of respondents remained neutral, which may indicate a lack of awareness or uncertainty regarding the current ethical implications and regulatory frameworks surrounding AI. On the other end of the spectrum, only 3% disagreed and 5% strongly disagreed with the need for strict ethical oversight. This combined 8% minority suggests that opposition to ethical regulation is minimal.

AI systems must be designed to ensure fairness across all demographic groups
Table no 5

Variables	Percentage
Strongly agree	38
Agree	49
Neutral	13
Disagree	0
Strongly Disagree	0

Source: Computed from Primary Data

The data shows a near-unanimous consensus on the importance of fairness in AI system design. A combined 87% of respondents support the statement, with 38% strongly agreeing and 49% agreeing that AI systems must be developed to ensure fairness across all demographic groups.

Only 13% of respondents chose a neutral stance, indicating some uncertainty or lack of strong opinion, but notably, no respondents disagreed or strongly disagreed with the statement. This absence of opposition reflects a collective acknowledgment of fairness as a core principle in ethical AI development.

Transparency in AI decision-making increases trust in its outcomes
Table no 6

Variables	Percentage
Strongly agree	33
Agree	47
Neutral	10
Disagree	10
Strongly Disagree	0

Source: Computed from Primary Data

The data reveals a strong positive inclination toward the belief that transparency in AI systems enhances trust. A total of 80% of respondents support this view, with 33% strongly agreeing and 47% agreeing that transparent AI decision-making processes lead to greater trust in their outcomes.

10% of respondents remained neutral. Interestingly, 10% also disagreed. Importantly no respondents strongly disagreed with the statement.

Organizations deploying AI should have dedicated ethics boards or committees.
Table no 7

Variables	Percentage
Strongly agree	44
Agree	49
Neutral	3
Disagree	5
Strongly Disagree	0

Source: Computed from Primary Data

A total of 93% of respondents support the establishment of dedicated ethics boards or committees, with 44% strongly agreeing and 49% agreeing with the statement.

Only 3% of respondents were neutral, suggesting that a small fraction may be undecided or unfamiliar with the operational roles of such boards. Meanwhile, 5% disagreed, indicating limited resistance to the idea—possibly due to concerns over bureaucracy or effectiveness. Notably, no respondents strongly disagreed.

Correlation Test between Awareness and Trust

H1: There is no relationship between level of awareness and trust in AI

Table No 8

Pearson Correlation	1	.973**
Sig. (2- tailed)		.000
N	50	50
Pearson Correlation	.973**	1
Sig. (2- tailed)	.000	
N	50	50

**** Correlation is significant at the 0.01 level (2-tailed).**

A Pearson correlation coefficient was computed to assess the relationship between the two variables under study. The results indicated a very strong positive correlation between awareness level and trust in AI with $r = 0.973$, $p < 0.01$ (two-tailed).

The significance value (Sig. 2-tailed = .000) confirms that the correlation is statistically significant at the 0.01 level. Hence Hypothesis is rejected.

Findings of the Study

- The study found that a majority of respondents are aware of ethical concerns related to AI. Only 8% reported no awareness, indicating that most respondents have at least a basic understanding of AI ethics.
- Respondents primarily belong to the Business field, followed by Technology, Education, and Health Sciences .The Law/ Policy domain is the least represented at 3%, highlighting a potential need for increased participation from legal and policy professionals in AI ethics discourse.
- The influence of AI is most visible in Retail and E-commerce, Healthcare, and Education. Finance accounts for 13% of responses, while Law Enforcement is the least represented at 2%, reflecting uneven adoption and exposure to AI across sectors.
- There is strong support for strict ethical regulation in AI, with 59% strongly agreeing and 18% agreeing—totaling 77%. Neutral responses accounted for 15%, and only a small fraction (8%) opposed ethical restrictions, indicating minimal resistance to regulatory frameworks.
- An overwhelming 87% of respondents emphasized the importance of fairness in AI systems, with 38% strongly agreeing and 49% agreeing. Only 13% remained neutral, and no respondents expressed disagreement, confirming fairness as a universally accepted ethical principle.
- Transparency was identified as a key factor in building trust in AI, supported by 80% of respondents (33% strongly agree, 47% agree). While 10% were neutral, another 10% disagreed, suggesting that although transparency is widely valued, some skepticism or uncertainty remains.
- A near-unanimous 93% of respondents favored the establishment of dedicated ethics boards or committees in organizations deploying AI. Only 3% were neutral and 5% disagreed. No respondents strongly opposed the idea, indicating broad consensus on the need for institutional ethical governance.

CONCLUSION

The study reveals a broad awareness and strong consensus among respondents regarding the ethical dimensions of Artificial Intelligence. Most participants recognize the importance of addressing ethical concerns, with significant support for implementing strict guidelines to govern AI systems. The emphasis on fairness and transparency reflects a shared understanding of the core values necessary for responsible AI development and deployment.

While the Business and Technology fields dominate AI engagement, the limited representation from the Law/Policy domain points to a critical gap

that needs attention. Similarly, sector-wise data highlights uneven adoption of AI, with minimal presence in areas like Law Enforcement, underscoring the need for more balanced integration.

The overwhelming endorsement for the establishment of dedicated ethics boards or committees indicates a collective call for institutional mechanisms to ensure accountability. Overall, the findings highlight the urgency of fostering interdisciplinary collaboration and strengthening ethical governance structures to guide the future of AI in a socially responsible manner.

SUGGESTIONS & SCOPE FOR FURTHER STUDY

Most respondents expressed their support for ethics boards, hence a follow-up study could explore organizational or structural barriers that prevent implementation, particularly in smaller or resource-limited institutions. Since fairness was unanimously agreed upon as important, future research could explore how fairness is defined and operationalized in different AI applications (e.g., facial recognition vs. credit scoring). Despite 80% supporting transparency, 10% expressed disagreement. Future research could explore the reasons behind skepticism toward transparency and its real impact on user trust. Investigate the effectiveness of ethics training in various domains (e.g., business schools, tech programs) and its influence on professional attitudes toward AI deployment. Predictors can be identified to support AI regulation—such as field of work, level of AI exposure, or awareness of specific risks.

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