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Ethical Application of Artificial Intelligence in the Contemporary Information Society: A Scoping Review

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Abstract

Background: Artificial intelligence (AI) has become a fundamental part of everyday life, making it crucial to integrate AI into the information society in ways that protect individual rights.

Objective: This study explores the perspectives of different stakeholders on the ethical use of AI. The aim of this research is to identify practical measures that can help address ethical challenges associated with AI deployment.

Methods: A scoping literature review approach was adopted, focusing on the most relevant articles addressing the ethical aspects of AI usage from Web of Science Core Collection and Scopus databases. The analysis was performed with focus on the perspectives of four key stakeholders: policymakers, AI innovators, business leaders, and individuals.

Results: Findings highlight key measures to promote ethical AI usage: technical, organisational, regulatory, and individual measures. In this context: (1) policymakers are responsible for establishing governance and regulations; (2) AI innovators must embed ethics into AI systems; (3) business leaders should establish ethical policies and guidelines; and (4) individuals need to think critically and use AI responsibly.

Conclusion: The responsible deployment of AI requires a comprehensive approach that involves the collaboration of all relevant stakeholders. The future development of AI relies on the adoption of ethical guidelines and the assurance of responsible AI system design.

Index Terms

Artificial intelligence; AI; Ethics; Information society; Stakeholders; Review.

1 INTRODUCTION

Information society is commonly defined as a society that generates significant amounts of information, creates diverse goods and services, and makes substantial use of information networks and information technology (Jeskanen-Sundström, 2003). Transition from an information society to a knowledge society emerged as a broader concept, encompassing the idea that individuals can utilize information technology to achieve higher goals, such as knowledge creation (Mehmood et al., 2014). Recent research reflects on digital society and digital transformation, starting to emphasize the significant role of AI as a means that will shape future society (Emmert-Streib, 2021). Reflecting this trend, AI has remained in the Gartner Hype Cycle over the past few years as one of the emerging and transformative technologies (Mora-López et al., 2025). AI systems have provided numerous benefits, but they also caused considerable risks and ethical dilemmas (Benabou & Touhami, 2025).

Existing literature tends to focus on specific AI applications rather than addressing the broader implications of AI in general, including problems associated with algorithms in their origin (Munk et al., 2024). This gap highlights the need for further research that examines AI in a more comprehensive manner, particularly its impact on people and its effects across various industries.

This paper will focus on AI in general, with the aim of discussing ethical measures that could be applied to the whole society. Under AI in general, it is considered all AI technologies, including machine learning, chatbots, and their subfields such as generative AI (Mora-López et al., 2025). From this perspective, it could be identified that major challenges are common to most stakeholders in the modern information society.

AI systems require a considerable amount of personal data to function well (Machucho-Cadena & Ortiz, 2025), leading to the collection and processing of massive amounts of data (Sai et al., 2025). This raises concerns about data security and privacy (Sai et al., 2025; Alves et al., 2024; Malik et al., 2022; Weber-Lewerenz, 2021), making privacy protection one of the most important components for safeguarding information ethics (Bruneault & Laflamme, 2021). The most common ethical challenges include bias, transparency, and data trustworthiness (de-Lima-Santos & Jamil, 2024; Sargiotis, 2024; Mensah, 2023), followed by privacy risks and threats to human rights (Lee et al., 2024), lack of effective AI governance (Mäntymäki et al., 2022), and lack of AI competence or literacy (Wang et al., 2024).

Common ethical concerns about AI reflect consumers' conflicting views, driven by privacy and cybersecurity risks, as well as broader ethical issues such as bias, autonomy, well-being, and job loss (Aguila et al., 2024; Kelley et al., 2021; Du & Xie, 2021). These findings align with a global survey on trust in AI, carried out between September and October 2022 using representative research panels of 17,193 participants across 17 countries (Gillespie et al., 2023). Results confirmed people's concerns about the potential risks of AI, with the most significant concern being cybersecurity risks, such as hacking or malware, expressed by 84% of respondents. Additionally, 68–77% expressed moderate to high concern about manipulative or harmful AI use, job loss and deskilling, loss of privacy, system failures, threats to human rights, and inaccurate responses. Although bias in AI was seen as somewhat less critical, it still worried 58% of participants.

A significant ethical concern represents public perception of AI, as widespread fear and anxiety about uncontrollable AI are increasingly evident in public discourse (Johnson & Verdicchio, 2017). This perception strongly supports the need for responsible development and use of AI (Benabou & Touhami, 2025; Kelley et al., 2021; Du & Xie, 2021; Cave et al., 2019). However, many individuals feel powerless regarding AI's development, believing that those who have control, whether tech companies or governments, do not sufficiently consider or engage with public opinions (Cave et al., 2019).

Aiming to capture public opinion on AI, a survey was conducted in July 2019 with 10,005 respondents from eight countries across six continents (Kelley et al., 2021). Respondents were recruited through online panels representing the online population of each country, employing a stratified sampling method with hard quotas on age and gender to ensure demographic representativeness. The results showed that a large majority (81%) of respondents emphasized that major technology companies must follow responsible innovation practices when developing AI products.

Today, along with information society, digital society, and digital transformation, a new term related to AI society is also mentioned (Paraman & Anamalah, 2023; Roberts et al., 2021; Fosso Wamba et al., 2020). The topic of creating a good AI society has gained a lot of attention, with an emphasis on developing ethical frameworks, policies, and guidelines that encourage responsible use of AI (Fosso Wamba et al., 2020). Developing a good AI society implies the creation of a society in which moral values are recognized, and AI innovations are designed to serve the common good and strengthen the sense of shared responsibility for developers, consumers, and policymakers (Paraman & Anamalah, 2023). However, to establish a good AI society, there is a need for developing a common set of values on national and international levels (Roberts et al., 2021). According to Floridi and Cowls (2019), a common framework for integrating AI into society should be founded on five fundamental principles:

1) **Beneficence** – The principle of creating AI technology that is beneficial to humanity, respects dignity, and supports sustainability.
2) **Non-Maleficence** – The principle referring to "do no harm," with attention to privacy, security, and the careful use of technology in terms of its capabilities.

3) **Autonomy** – The principle emphasizing that humans should retain the power to make decisions, thereby preserving human judgment and ensuring human control.
4) **Justice** – The principle stating that AI must promote fairness, solidarity, and prevent any form of discrimination.
5) **Explicability** – The principle referring to the transparency, accountability, and understandability of AI technologies.

These principles align with European Commission (2019) "Ethics guidelines for trustworthy AI", which require adherence to seven key principles to ensure that AI meets people's needs: (1) human agency and oversight, (2) technical robustness and safety, (3) privacy and data governance, (4) transparency, (5) diversity, non-discrimination and fairness, (6) societal and environmental well-being, and (7) accountability. Similar efforts were made by UNESCO's "Recommendation on the Ethics of Artificial Intelligence" adopted in November 2021, which emphasizes two additional principles, such as public awareness and AI literacy, as well as adaptive AI governance and collaboration among all stakeholders (UNESCO, 2022). It can be concluded that the guidelines were created on the basis of the most common ethical concerns that emerged within society. These principles will serve as a guiding thread in this research, aiming to capture the most important ideas related to mitigating AI risks and promoting ethical use of AI. Morley et al. (2020) emphasized that debate around AI ethics was primarily focused on establishing the theoretical principles, rather than on practical measures the AI community could take to mitigate the associated risks. It is crucial to take a holistic approach to mitigating AI risks, as AI safety goes beyond technical challenges and has an overall impact on society as a whole (CAIS, 2024). Numerous authors have recognized the role that various stakeholders play in reducing AI risks, from technology companies (Kelley et al., 2021), organizations (Du & Xie, 2021), and government (Cave et al., 2019).

The ethical development of AI systems in the information society depends on three main types of stakeholders (Deshpande & Sharp, 2022):

1) individuals (users, developers, programmers, AI experts, researchers, etc.),
2) organizations (technological firms, research centres, and different communities), and
3) policymakers (legislative bodies, regulatory agencies, and international organizations).

This paper aims to explore what measures can be taken to encourage stakeholders to use AI ethically and mitigate associated risks. Therefore, the general research question is as follows:

> Which measures can information society stakeholders implement to promote the ethical use of AI and mitigate associated risks?

To analyse the most significant scientific articles addressing the ethical use of AI, a systematic scoping literature review was conducted (Tricco et al., 2018). The paper presents a synthesis of research findings, discusses the limitations of the reviewed articles, and offers guidelines for future research.

2 RESEARCH METHODS

To conduct the literature review, a systematic scoping review was employed to identify the most significant articles about ethical AI usage. Scoping reviews are a type of knowledge synthesis that uses a systematic and transparent approach to quickly map existing research, making them especially useful for exploring complex or emerging topics (Peters et al., 2015; Tricco et al., 2018). This method was chosen due to its suitability for mapping the existing literature, identifying key concepts, and stakeholders' perspectives related to the ethical application of AI. To ensure transparency and quality in reporting, this study followed the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) checklist (Tricco et al., 2018), developed as an extension of the original PRISMA approach (Moher et al., 2009). In this context, the identified records retrieved through database searches will be referred to as articles, with each article representing a single study. This distinction will allow for better clarification of the PRISMA-ScR flow diagram.

2.1 Search strategy

To identify the most relevant and influential literature on the ethical use of AI, two databases were selected as primary sources: Scopus and Web of Science Core Collection (WoS CC). The literature search strategy employed advanced search expressions to identify articles relevant to the research focus. The following search query was used: ("**privacy**" OR "**data privacy**" OR "**data protection**" OR "**ethic***") NEAR/15 ("**artificial Intelligence**" OR "**AI**") AND ("**information societ***" OR "**knowledge society***" OR "**digital societ***" OR "**digital transformation**").

Articles were selected if the terms defined in the search query appeared in the titles, abstracts, or keywords. The literature search was conducted on 9 November 2025. Furthermore, no time frame was specified, allowing for a comprehensive coverage of the entire discourse on AI. The types of records considered were journal articles, review articles, and early access articles, while conference papers, book chapters, and communications were excluded. Using these inclusion criteria and search strategy, a total of 480 articles were retrieved, with 294 from the Scopus database and 186 from the WoS CC.

After retrieving the initial set of articles, duplicates were removed, eliminating 143 duplicate records. Following this process, a total of 337 distinct articles remained, which were included in the further screening process. Figure 1 shows the PRISMA-ScR flow diagram that outlines the scoping literature review procedure.

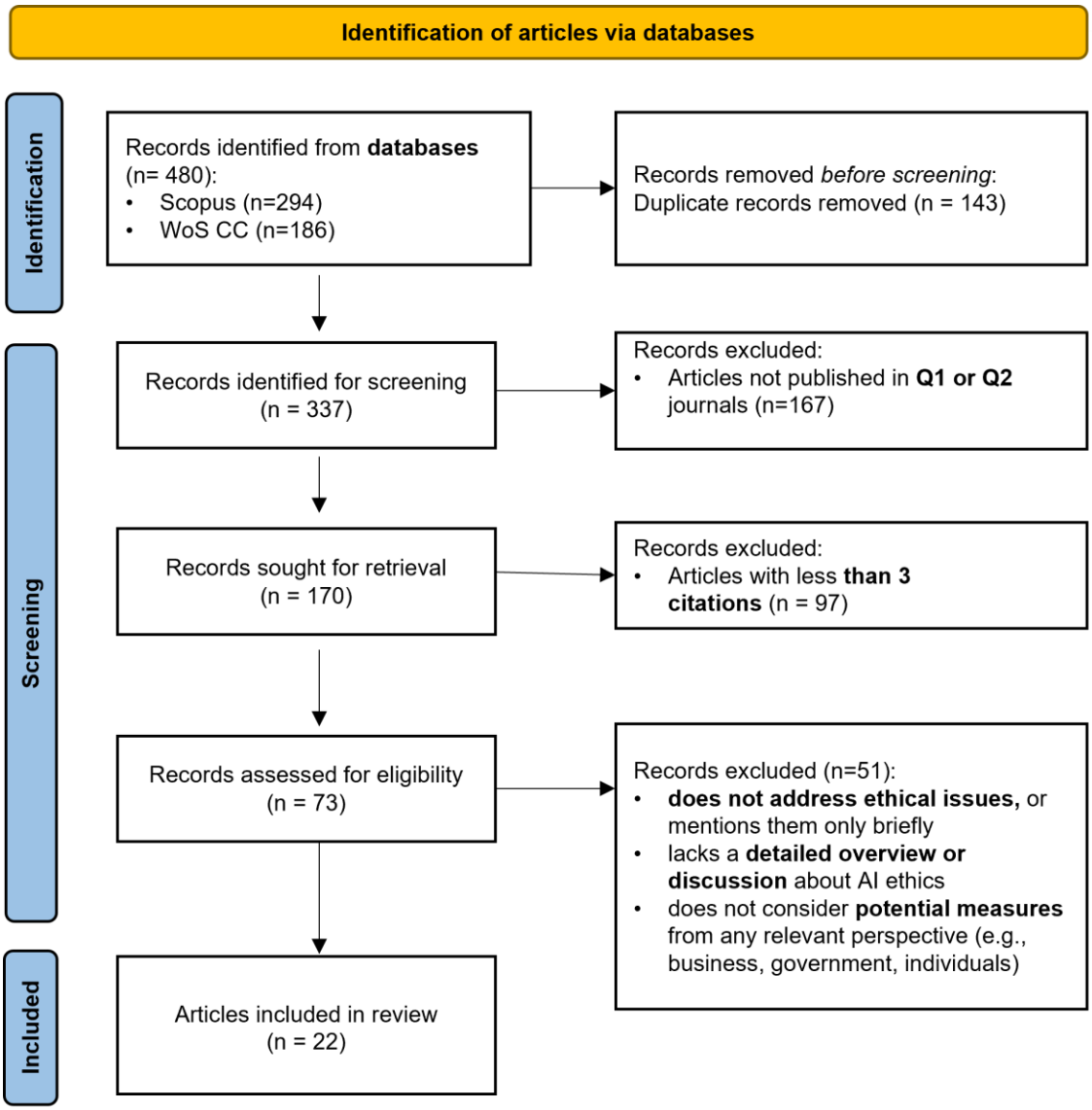

Figure 1. *PRISMA-ScR flow diagram of scoping literature review.*
Source: Based on Tricco et al. (2018).

2.2 Selection

For further article selection, criteria based on journal quality and citation thresholds were applied to select the most relevant articles. The initial dataset was established by selecting only articles published in Q1 (first quartile) or Q2 (second quartile) journals, to ensure an overview of the most impactful works in the field. This criterion yielded a total of 170 articles from Scopus and WoS CC.

Figure 2 shows the number of articles collected through the Scopus and WoS CC databases after removing duplicates. It can be observed that the number of articles has increased significantly over the last two years.

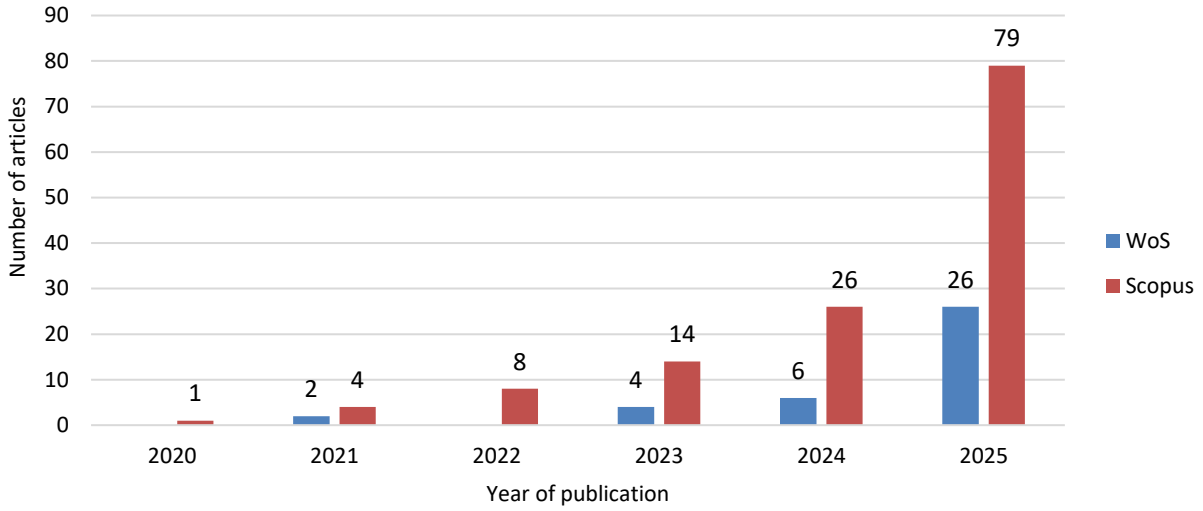

Figure 2. *Selected articles sought for retrieval through PRISMA-ScR (N = 170).*

To identify influential articles, a second criterion was applied, which limited the selection to only those articles that have at least three citations. This threshold was intentionally set lower to avoid excluding recent articles that may be highly relevant but have not yet accumulated significant citation counts. This criterion yielded 73 articles that were further assessed for eligibility. As part of the eligibility criteria, only articles that directly focused on the ethical considerations of AI usage were included, excluding those that did not directly address this topic or just mentioned ethical concerns without further elaboration. This type of selection helped to maintain focus on the key interest of the study, especially as a lot of articles tackle ethical issues, but don't go into depth or provide meaningful measures that can help mitigate ethical risks associated with AI.

The article selection included a review of both titles and abstracts using the explained inclusion and exclusion criteria, followed by full-text retrieval. This process was conducted by two researchers, namely the authors of the paper. The final dataset included 22 articles (see also Appendix A) that were relevant to the topic, discussed challenges and measures taken for ethical application of AI from the perspectives of one or more stakeholders. As supplementary criteria in identifying the most significant articles, journal-level metrics such as the SCImago Journal Rank (SJR) and Source Normalized Impact per Paper (SNIP) were also considered.

Table 1 shows the most significant articles based on the citation count from Scopus. It can be seen that nearly all articles have a SNIP score close to 1 or higher, indicating a high quality of citation impact for the selected articles. Additionally, the influence of the individual articles is evident from their citation counts and the SJR rankings of the journals in which they were published.

Table 1. *Journals including the reviewed articles (N = 22).*

Source title	Quartile	Field	SJR 2024 (Q)	SNIP 2024
International Journal of Information Management	Q1	Artificial Intelligence	6.260	6.932
Journal of Strategic Information Systems	Q1	Information Systems	3.765	3.450
Journal of Hospitality Marketing & Management	Q1	Management Information Systems	3.212	2.967

Source title	Quartile	Field	SJR 2024 (Q)	SNIP 2024
Machine Learning and Knowledge Extraction	Q1	Artificial Intelligence	1.437	2.562
AI and Society	Q1	Artificial Intelligence	1.208	2.364
IEEE Open Journal of the Communications Society	Q1	Computer Networks and Communications	2.183	2.237
Journal of Internet Services and Information Security	Q2	Computer Science (miscellaneous)	0.395	2.185
Discover Artificial Intelligence	Q2	Artificial Intelligence	0.876	2.157
International Journal of Manpower	Q1	Strategy and management	1.411	1.849
Annals of Operations Research	Q1	Decision Sciences	1.092	1.618
Journal of Family Business Management	Q1	Strategy and management	0.983	1.519
IEEE Access	Q1	Computer Science (miscellaneous)	0.849	1.504
Education Sciences	Q1	Education	0.730	1.411
BMC Health Services Research	Q1	Medicine	1.174	1.306
Administrative Sciences	Q2	Business Management and Accounting	0.706	1.261
Entrepreneurial Business and Economics Review	Q1	Economics, Econometrics and Finance (miscellaneous)	0.646	1.134
Contemporary Social Science	Q1	Social Sciences (miscellaneous)	0.602	1.079
Systems	Q2	Computer Networks and Communications	0.579	0.881
IEEE Engineering Management Review	Q2	Strategy and management	0.473	0.852
Journal of Information, Communication and Ethics in Society	Q1	Communication	0.578	0.766
International Journal of Crowd Science	Q2	Decision Sciences (miscellaneous)	0.407	0.655
SN Applied Sciences	Q2	Engineering (miscellaneous)	-	-

As shown in Table 1, most articles came from the business field, but there were also some articles from education, medicine, and technical fields such as engineering and computer networks. Therefore, chosen keywords successfully captured articles from various fields while maintaining a focus on society as a whole. This emphasizes that general ethical concerns about AI usage are widespread across all areas.

3 RESULTS

This study examined 22 articles, which will be briefly presented using thematic analysis from a stakeholder perspective. This approach provides an overview of the main research themes and their related areas.

3.1 Synthesis of findings from scoping review

The synthesis of results will be organized by stakeholder perspectives, examining the measures each stakeholder can take to address ethical challenges related to the use of AI. The research results are presented in Table 2, where each article is analysed according to its stakeholder perspective, research area, and topic/theme. The 22 articles were grouped according to stakeholders in order to highlight their role and to gain insight into the most prevalent research themes within the group.

Table 2. *Synthesis of research themes based on stakeholder perspectives.*

Stakeholder perspective	Research area (domain)	Themes	Number of articles
AI development	Cybersecurity and privacy, ethical management, and ethical AI solutions	generative AI adoption in cybersecurity and privacy fields, human-AI interaction, ethical AI designs (fairness)	3

Stakeholder perspective	Research area (domain)	Themes	Number of articles
Business	Industry 4.0 and 5.0, digital transformation, AI-driven business innovations, management and economics, human resource management, family businesses, small and medium-sized enterprises (SMEs), hospital management	AI impact on business innovation, ethical digital transformation, corporate digital responsibility, impact and challenges of AI and generative AI adoption (employees' experiences, technostress, role of human resource management, strategic integration, responsible use of AI, etc.)	12
Government	public administration, law, policymaking, ethical AI development	regulation of AI and robotics, ethical decision-making, impact, and challenges of AI adoption in legal and government services	3
Holistic approach	policymaking, education, research, practice	AI ethics, impact, and challenges of generative AI for policymakers, educators, individuals, researchers, and practitioners (biases in AI systems, rapid technology development, pervasiveness of AI, etc.)	4

4 DISCUSSION

Following the identification of main themes and stakeholder perspectives, the key measures that each stakeholder can take are identified. To promote the ethical use of AI and mitigate associated risks, stakeholders should adopt technical, organizational, regulatory, and individual measures. Figure 3 provides a brief overview of the main stakeholder groups around which the study findings were analysed (see also Appendix A). The following sections discuss the findings according to the main stakeholders responsible for implementing these measures.

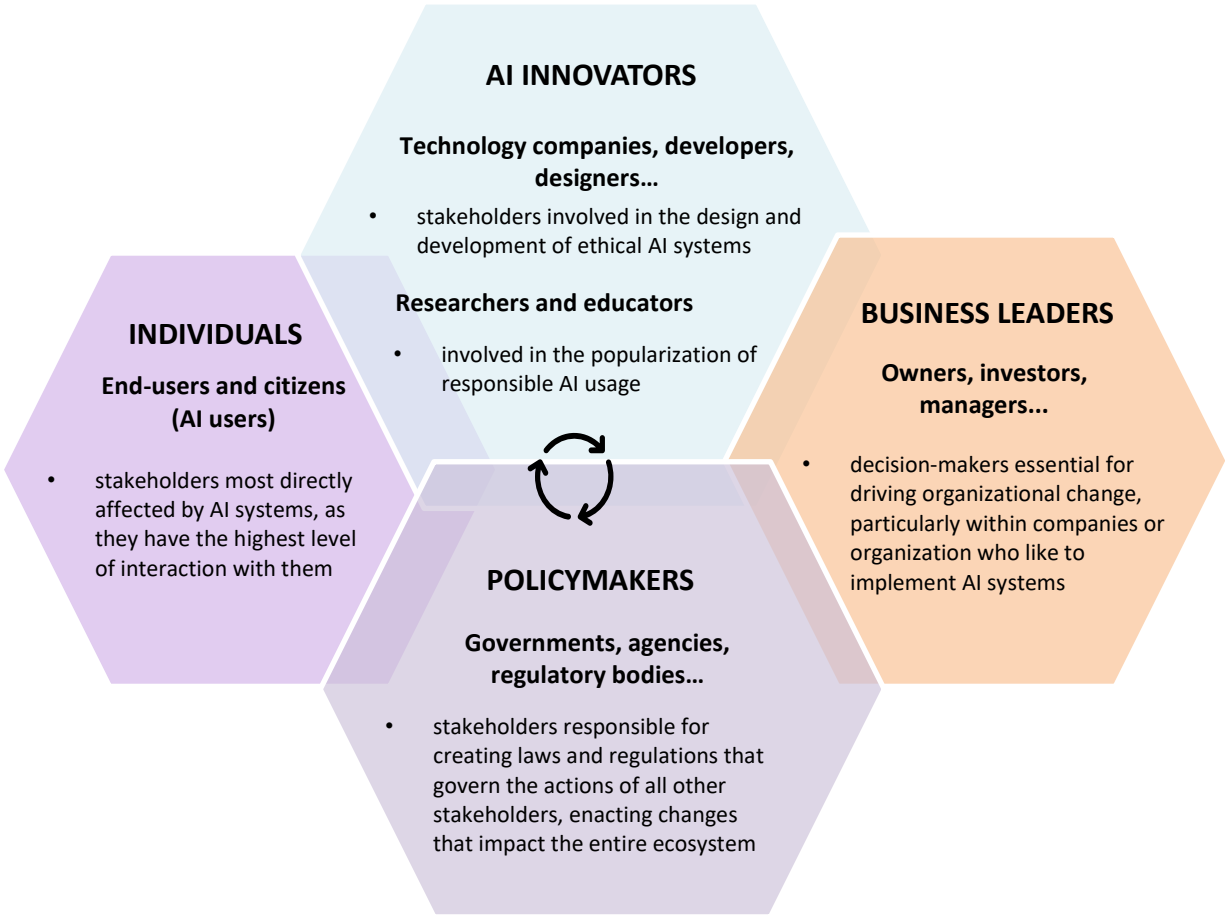

Figure 3. *Overview of key stakeholders in the ethical application of AI.*

4.1 AI innovators

This is the largest group of stakeholders directly involved in the development and popularization of AI, comprising technology companies, developers, designers, researchers, and educators. Therefore, they are called "AI innovators" to highlight their active role in shaping, improving, and promoting AI technologies and practices. All of these stakeholders have a significant influence on the ethical application of AI. Each of them can take specific measures to mitigate the risks associated with AI.

Technology companies, developers, and designers: most of the problems, such as bias and lack of transparency in AI models, arise from the limitations of AI systems themselves. AI developers play a key role in this, as they need to embed ethical principles into AI systems (Gupta et al., 2023). Researchers suggest applying "ethics-by-design" principles to AI development, emphasizing the need for developers to consider ethical aspects, such as moral questions and values, when developing AI systems (Iphofen & Kritikos, 2021; Weber-Lewerenz, 2021). Embedding ethics as an integral part of an AI system can prevent or correct injustices and force organizations to adapt to regulatory compliance (Sobrino-García, 2021). Weber-Lewerenz (2021) warns against allowing robots and autonomous learning machines to develop their own moral agency and learn independently, noting the potential harmful consequences and the necessity for policies to restrict such moral autonomy. Equally important is training AI models on high-quality data that are free of biases (Al-Kfairy, 2025). To reduce misinformation, biases, and issues related to inaccurate data, it is recommended that models should be trained on reliable and verified datasets (Dwivedi et al., 2023; Sobrino-García, 2021). Additionally, data must be regularly updated to reduce AI model "hallucinations", i.e., the generation of fabricated content resulting from the model's inability to locate accurate information within existing data (Dwivedi et al., 2023). Most authors agree that incorporating human feedback loops into model training could help mitigate bias and correct system errors (Gupta et al., 2023). Developers are also expected to enhance security measures, monitor the generation of potentially harmful content, and ensure legal compliance (Dwivedi et al., 2023). Furthermore, AI tools can be effectively used to prevent cyberattacks (Gupta et al., 2023).

Researchers and educators: Researchers should conduct more studies on AI (Adel et al., 2024; Dwivedi et al., 2023; Wach et al., 2023). Through their work, they can accelerate the development of ethical and legal frameworks that will support the efforts of other stakeholders (Wach et al., 2023). For example, by developing frameworks for fair AI system design, they can assist developers in understanding how to integrate ethical principles into AI systems (Zhang et al., 2023). Creating models for ethical management of human–AI interaction can promote the responsible use of AI in business environments (Heyder et al., 2023). The development of codes of conduct for the use of AI in academia can help ensure transparency in research publication (Dwivedi et al., 2023). Educators, such as teachers and instructors, play a key role in developing AI-related skills (Adel et al., 2024) and in raising awareness about both the benefits and limitations of AI (Dwivedi et al., 2023).

AI innovators are largely responsible for implementing **technical measures:**

- **Ethics by design:** Several authors argue that the principles of "ethics by design" should be applied in the development of AI systems (Weber-Lewerenz, 2021; Iphofen & Kritikos, 2021). Applying an ethics-by-design approach means that ethical considerations must be integrated into AI development from the earliest stages, embedding ethical principles into both technological design and its intended applications (Weber-Lewerenz, 2021). Additionally, AI developers should prioritize the avoidance of harm during the technology development process, constantly considering the risks associated with AI systems and consulting with relevant actors to prevent harmful applications (Iphofen & Kritikos, 2021).
- **Biases and fairness:** A major source of bias in AI arises from the training data (Sobrino-García, 2021). This is often caused by low data quality, biased historical data, or datasets that reflect social inequalities (Al-Kfairy, 2025; Sobrino-García, 2021). It should be ensured that AI algorithms do not replicate biases present in society (Malik et al., 2022), as this can lead to discrimination, such as gender-based biases (Emmert-Streib, 2021; Sobrino-García, 2021; Weber-Lewerenz, 2021) or other violations of human rights (Aguila et al., 2024). Using diverse and representative datasets is essential to mitigate these issues (Machucho-Cadena & Ortiz, 2025; Sobrino-García, 2021). However, in addition to diverse datasets, fairness-promoting algorithms are required to effectively address potential biases (Al-Kfairy, 2025). Machine learning techniques aimed at

reducing bias and discrimination include the development of algorithmic rules that embed fairness constraints into AI systems (Machucho-Cadena & Ortiz, 2025).

- **Transparency and explainability**: AI functions as a "black box", meaning it is often unclear how data is analyzed and how decisions are made (Al-Kfairy, 2025; Iphofen & Kritikos, 2021; Machucho-Cadena & Ortiz, 2025; Sobrino-García, 2021). Lack of transparency in AI algorithms raises serious ethical concerns (Iphofen & Kritikos, 2021), particularly regarding decision-making processes (Al-Kfairy, 2025), and the integrity of the decisions (Alves et al., 2024). Transparency of AI systems refers to the understanding of how an algorithmic decision is made, on what assumptions, and how this decision can be corrected based on stakeholder feedback (Sobrino-García, 2021). Therefore, the quality of AI decisions cannot be properly assessed without understanding how they function (Iphofen & Kritikos, 2021). Improving explainability and building trust are essential for fostering corporate digital responsibility (Weber-Lewerenz, 2021). Currently, no accountability frameworks exist to hold institutions responsible for algorithmic decisions, as current mechanisms are primarily designed for human decision-makers (Iphofen & Kritikos, 2021). Promoting algorithmic transparency and accountability requires the development of frameworks that improve understanding of AI and machine learning decision-making processes (Gursoy et al., 2025). Indicators for evaluating AI transparency and trustworthiness include the availability of open or semi-open code, the presence of neutrality, and human oversight (Sobrino-García, 2021). Prioritizing the development of explainable AI systems is crucial; in that case, techniques such as Explainable AI (XAI), Local Interpretable Model-agnostic Explanations (LIME), Shapley Additive exPlanations (SHAP), and counterfactual explanation can be used (Machucho-Cadena & Ortiz, 2025).

4.2 Business leaders

This group of stakeholders is called “business leaders” because it includes key decision-makers, such as owners, managers, and investors, who play a central role in driving change within organizations. Although the emphasis is put on the business sector, this category can include any organization seeking to implement AI. These stakeholders must stay informed about the latest research on AI (Wach et al., 2023). Their responsibility includes establishing policies and guidelines for the responsible use of AI technologies (Wach et al., 2023), in order to prevent data leaks and ensure the protection of sensitive company information (Dwivedi et al., 2023; Gupta et al., 2023). It has been emphasized that such policies should be elevated to a strategic level and embedded within the entire organizational culture (Heyder et al., 2023). Business leaders should also be actively involved in training AI models, contributing their expertise and objective judgment to help reduce model biases and limitations (Wach et al., 2023). Business decision-making process should incorporate ethics (Saurabh et al., 2022), as well as ethical concerns about AI, surrounding data, and privacy (Tunçalp, 2025). Business groups should incorporate responsible and ethical initiatives into their strategic vision to align technological improvements with organizational values (Sun et al., 2025). Business leaders are mostly responsible for the implementation of **organizational measures:**

- **Implementation of security and privacy measures**: Organizations are advised to establish robust protocols to protect data throughout its lifecycle, from collection, storage, processing, and data deletion (Al-Kfairy, 2025). Companies can implement privacy-preserving methods, such as federated learning and differential privacy to protect user privacy when using data for AI applications (Machucho-Cadena & Ortiz, 2025). Additionally, adopting data anonymization techniques is essential for enhancing user privacy protection (Al-Kfairy, 2025). Corporate management share significant amount of responsibility for data protection, including protection of both company and personal data, as well as protection against data misuse (Weber-Lewerenz, 2021). Managing sensitive data and ensuring robust data privacy and security is crucial (Al-Kfairy, 2025; Emmert-Streib, 2021). There are various cases in which data protection is critical and can have serious consequences if not followed. In hospital management, strong data protection, robust and secure databases, and careful regulation of AI technology are needed (Alves et al., 2024). In the context of retail and e-commerce, employing generative AI to improve personalized consumer experiences needs stringent measures to preserve customer privacy and ensure ethical usage of client data (Sai et al., 2025). Additionally, focus on data privacy is especially evident in family businesses that have close ties with their customers (Tunçalp, 2025).
- **Compliance with regulations:** AI initiatives must be developed and designed in compliance with current data protection regulations (Sobrino-García, 2021). Organizations should comply with existing regulations,

such as the General Data Protection Regulation (GDPR), and establish robust data governance practices (Al-Kfairy, 2025; Gursoy et al., 2025; Machucho-Cadena & Ortiz, 2025; Sai et al., 2025). They must adopt strong data management protocols that align with security standards and ethical guidelines (Al-Kfairy, 2025). In environments characterized by rapid technology advancement and high technological uncertainty, the adoption of responsible AI practices is essential (Sun et al., 2025). Corporate digital responsibility (CDR) should be established as a set of ethical practices and behaviors that guide organizations in the responsible use of digital technologies and data, aiming to balance societal, economic, and environmental considerations (Gursoy et al., 2025). Further development of ethical values and codes of conduct is essential (Weber-Lewerenz, 2021), alongside the establishment of company policies and practices that prioritize ethical AI usage by employees (Fenwick et al., 2024).

- **Ethical decision-making:** In an organizational environment, the challenge of ethical decision-making arises (Aguila et al., 2024; Al-Kfairy, 2025; Gursoy et al., 2025; Iphofen & Kritikos, 2021; Malik et al., 2022; Weber-Lewerenz, 2021). Ethical decision-making procedures should be institutionalized in corporate cultures worldwide, and decision-makers must recognize the benefits of AI and implement it in a responsible and moral way (Weber-Lewerenz, 2021). For example, organizations can employ fairness-aware machine learning algorithms to detect and mitigate potential biases and conduct regular audits of AI decisions (Al-Kfairy, 2025). Organizations are proposed to implement AI-based decision-making in two ways: sequentially or aggregated. In a sequential implementation, organizations must: (1) choose data sources, (2) select appropriate algorithms, and (3) train and deploy AI systems (Malik et al., 2022). Moreover, a robust technical infrastructure is necessary to support ethical decision-making and accountability (Gursoy et al., 2025).
- **Reporting:** Organizations must provide clear explanations for decisions made by AI systems, particularly in critical sectors such as finance, healthcare, and employment, where these decisions can significantly affect individuals (Al-Kfairy, 2025). Implementing algorithmic auditing within software development companies or public institutions can address some ethical concerns related to AI systems (Sobrino-García, 2021). Additionally, regular audits of AI decisions at the organizational level should be implemented to ensure accountability (Al-Kfairy, 2025).
- **Educating managers and employees:** Organisations should invest in AI ethics training and workforce upskilling (Machucho-Cadena & Ortiz, 2025; Malik et al., 2022). Employees must be educated on responsible data handling practices to meet consumer expectations (Gursoy et al., 2025). Additionally, companies should provide hands-on exercises in ethical decision-making, case studies on AI-related ethical challenges, and support for continuous professional development (Machucho-Cadena & Ortiz, 2025). Managers have an essential role in fostering responsible digital practices (Gursoy et al., 2025). Therefore, specialized training is also needed to ensure that those who have a leading role are familiar with the responsible and ethical use of AI technology (Alves et al., 2024).
- **Job displacement:** Resistance to AI adoption is significantly influenced by concerns regarding job displacement and a perceived loss of control (Al-Kfairy, 2025). Researchers have debated the potential for machines and robots, particularly generative AI, to replace human workers in some jobs, such as content writing (Dwivedi et al., 2023). Concerns about job loss are particularly evident in organizations with close employer–employee relationships, such as in family businesses (Tunçalp, 2025). The risk of job loss significantly affects employees' psyche, causing stress, demotivation, and fear of replacement (Malik et al., 2022). This creates substantial psychological pressure, as employees feel a constant need to adapt. To address this, employees should be informed that AI can assist them in completing tasks more efficiently. Fenwick et al. (2024) highlight that human resource management (HRM) plays a crucial role in communicating the benefits of AI in improving their work processes. Organizations can implement additional interventions to identify, manage, and prevent technostress, such as modifying job-related demands and providing therapeutic support for individuals experiencing excessive stress (Malik et al., 2022).

4.3 Policymakers

This group of stakeholders refers to subjects who make laws or hold the authority to enact changes affecting all other stakeholders and are therefore called "policymakers". Policymakers need to establish clear policies, guidelines, and standards to regulate the AI market and prevent potential abuses (Adel et al., 2024; Dwivedi et al., 2023; Wach et al.,

2023). To address fears of job loss due to AI, governments can provide support programs, transition assistance, and employee retraining, with a focus on developing transversal skills applicable across various fields (Wach et al., 2023). By conducting training and education for teaching staff, the workforce can be prepared to further disseminate knowledge (Adel et al., 2024). It is important to establish criteria for evaluating AI outcomes (Dwivedi et al., 2023), as well as to ensure the protection of rights and intellectual property (Wach et al., 2023). For this reason, policymakers have a key role in the implementation of **regulatory measures**:

- **Governance and regulations**: Policymakers and industry leaders play a key role in ensuring the governance of AI (Machucho-Cadena & Ortiz, 2025). Protecting personal data is especially important in government services because they handle large amounts of citizen data, and privacy breaches in these services would have serious consequences (Sobrino-García, 2021). In terms of regulations, increased transparency in annual corporate reports may be required from stakeholders, alongside the establishment of roles like Chief Ethics Officer (Weber-Lewerenz, 2021) or AI ethics brand ambassador (Saurabh et al., 2022). Regular audits of AI decision-making are also anticipated (Al-Kfairy, 2025) to ensure AI actions align with human interests and values (Bruneault & Laflamme, 2021). It is recommended for organizations to establish AI ethics committees or boards to monitor ethical issues and assess the impact of their AI systems (Machucho-Cadena & Ortiz, 2025). At the legislative and administrative level, establishing control mechanisms, audits, protocols, and collegiate bodies or committees could provide additional control over AI project development (Sobrino-García, 2021). A supportive legal environment, compliance with regulatory frameworks, investment in specialized AI knowledge for personnel, and solutions to technological challenges like integration with legacy systems are essential (Al-Kfairy, 2025). The GDPR is the first legislation to address algorithmic discrimination, and it is expected to possibly restrict automated individual decision-making (Iphofen & Kritikos, 2021). Regulations must be put in place to limit or prevent the misuse of AI and solve the ethical issues arising from its deployment (Bruneault & Laflamme, 2021).
- **Standards**: Currently, there is a lack of best practices and standards regarding the ethical, legal, cultural, and institutional integration of AI in society (Al-Kfairy, 2025; Weber-Lewerenz, 2021). Ethical considerations often remain limited to specific applications, without addressing the global ethical issues (Bruneault & Laflamme, 2021). Establishing ethical standards applicable across all European member states could facilitate broad dialogue and policy-making processes (Weber-Lewerenz, 2021). Moreover, standardizing international legal regulations is essential to preventing potential harms associated with the use of AI (Aguila et al., 2024). An ethical framework for using AI must be established at the political and legal levels (Weber-Lewerenz, 2021). Such a framework should address AI's capabilities as well as the potential challenges it may create, particularly in terms of its impact on individuals, groups, and society as a whole (Bruneault & Laflamme, 2021). It may draw on the European Parliament's proposals for an ethical framework governing the design and development of AI technologies (Sobrino-García, 2021). Additionally, there is a need to establish a common ethical framework aimed at ensuring the transparent processing of personal data and automated decision-making (Iphofe & Kritikos, 2021).
- **Ethical AI development**: Most authors emphasize that ethical development of AI is needed (Machucho-Cadena & Ortiz, 2025; Gursoy et al., 2025; Weber-Lewerenz, 2021; Sobrino-García, 2021; Iphofen & Kritikos, 2021; Bruneault & Laflamme, 2021). As part of these efforts, guidelines are being developed to govern the development of AI (Bruneault & Laflamme, 2021). Design of AI systems should not focus only on the technical or algorithmic incorporation of ethical reasoning, but also incorporate the codes of conduct, standards, and certification processes that ensure the integrity of developers and users (Iphofen & Kritikos, 2021). In order to enhance the ethical standards within the field, the development of a specific ethical statement for AI professionals is proposed (Sobrino-García, 2021). This code would not only establish behavior standards but also emphasize the importance of respecting societal values and human rights during algorithm development. Furthermore, attention should be drawn to the privacy aspect, as the development and design of AI projects must follow current data protection legislation (Sobrino-García, 2021). An AI governance system should focus on the collaboration between humans and machines (Saurabh et al., 2022). Some form of algorithmic governance should be implemented because machines may eventually be able to make autonomous decisions without human oversight (Bruneault & Laflamme, 2021). Therefore, one of the safest measures may be to ensure that AI systems never acquire full moral autonomy in their decision-making processes (Iphofen & Kritikos, 2021).

- **Collaboration**: A large number of researchers have emphasized that the ethical development of AI systems requires collaboration (Machucho-Cadena & Ortiz, 2025; Weber-Lewerenz, 2021; Iphofen & Kritikos, 2021). Ethical AI development demands a collaborative approach that integrates expertise from technical fields, ethics, law, and domain specialists (Machucho-Cadena & Ortiz, 2025). Effective training of AI systems also relies on multidisciplinary teams whose diverse knowledge enables a comprehensive understanding of various sectors such as industry, medicine, and law (Weber-Lewerenz, 2021). Establishing data ethics standards requires collaboration with digital communities, industry stakeholders, and regulatory agencies (Gursoy et al., 2025). Furthermore, collaboration between policymakers and technology experts is essential to identify, prevent, and mitigate potential malicious applications of AI (Iphofen & Kritikos, 2021).

4.4 Individuals

This group of stakeholders includes AI users, such as end-users and citizens, who directly interact with AI systems and are among those most affected by them (Deshpande & Sharp, 2022). They are called "individuals" because they represent each stakeholder on whom the design and development of ethical AI systems will have the greatest impact. This group highlights the importance of all AI users to use technology consciously, understand its limitations, and critically evaluate the content it generates (Dwivedi et al., 2023). However, there are two groups of AI users: one called “power users” that are exploiting the full potential of AI technologies, and the second group, which is only using it to get fast answers (Alderson, 2026). Proposed measures for these two groups could differ because of the level of expertise and awareness of the potential implications of AI systems.

Individuals play a critical role in the ethical technology usage, as users must be aware of potential risks and utilize technology responsibly (Gursoy et al., 2025). It is recommended that users apply fact-checking mechanisms when using AI (Wach et al., 2023) to verify the accuracy of the information provided (Dwivedi et al., 2023). For added privacy protection, users are advised to delete their chat histories with AI tools to reduce the risk of data breaches in the event of a privacy violation (Gupta et al., 2023). Individuals should use AI ethically and responsibly—this includes avoiding the input of sensitive data (Gupta et al., 2023), the generation of fake images without consent (Wach et al., 2023), or other violations of intellectual property rights (Dwivedi et al., 2023). Finally, individuals should remain aware of the potential influence AI can have on their personal judgment and decision-making (Wach et al., 2023).

4.5 Research synthesis and limitations

There is consensus among authors that adopting ethical guidelines and ensuring the responsible design of AI systems are essential for future development. Table 3 shows summarized key measures that stakeholders can take to mitigate ethical risks related to AI.

Table 3. *Synthesis of key stakeholder measures to address ethical AI risks.*

Stakeholders	Measures taken to mitigate the AI risks
AI development	*Technology companies:* • implementing the **“ethics by design”** principle • addressing **biases and promoting fairness** (training AI models on **high-quality, unbiased,** and **up-to-date data)** • improving **transparency and explainability** *Researchers and educators:* • **conducting more research** (ethical AI development, use of AI in business environments, exploring AI usage by individuals, etc.) • discussing **ethical frameworks and codes of conduct** • improving **AI literacy**
Business	• implementing **security and privacy measures** • **establishing policies and guidelines** for the responsible use of AI • ensuring **compliance with regulations** and **regular AI audits** • promoting **ethical decision-making** • adopting **a strategic perspective** of ethical AI implementation • fostering **education about ethical AI usage** (employees, managers) • helping to address **concerns about job loss**

Policymakers	• establishing **governance and regulatory frameworks** (policies, guidelines, mechanisms) • developing **ethical standards and best practices** • fostering **ethical development of AI** • promoting **collaboration among all stakeholders** (policymakers, industry leaders, communities)
Individuals	• **critical thinking and fact-checking** • understanding **limitations of AI technologies** • **ethical and responsible** use of AI • **raising awareness about AI's impact** on personal judgments and decision-making

Articles examining this topic from the perspective of developers emphasize the numerous vulnerabilities of AI systems, highlighting the importance of implementing strict protective measures. Several articles that analyse the use of AI through the lens of business point to the importance of ethical and responsible AI use to preserve data confidentiality, while articles related to education stress the importance of guidelines for the ethical use of AI tools.

Methodological limitations should be considered. In the synthesis of expert narratives, the main limitations relate to the potential inconsistency and overlap of narratives, as each author's contribution is analysed individually. A few articles focus solely on one AI tool (ChatGPT), providing practical examples and guidelines for its specific use. Most of the articles were limited to examining AI challenges from a business perspective, indicating a need for a more balanced analysis that will consider an equal representation of articles across different stakeholder perspectives. Furthermore, although qualitative and quantitative studies were included, a majority of selected articles consisted of literature reviews, thus missing the opportunity to gain deeper insights into practical challenges and solutions. Considering the citation threshold of three citations, it is possible that some important recent articles were not included, as this can occur when a citation count is used as a selection criterion.

5 FUTURE RESEARCH

This literature review has revealed several important open questions and unresolved issues that need to be further explored. Future research should focus on some of the solutions mentioned in the literature review:

- Developing ethical and legal frameworks for the use of AI, while ensuring that investment in AI is not limited and its use in certain domains is not hindered.
- Studying the challenges and ethical aspects of AI use in business environments, primarily through user studies or focus groups that could lay the foundation for developing an ethical framework.
- Enhancing AI literacy for educators, with a key focus on designing AI skills development programs for teachers and encouraging them to integrate AI technology into educational activities.
- Improving AI literacy for students, emphasizing the role of teachers and addressing questions about which guidelines to follow when giving instructions and how to monitor students' use of AI.

Focus is put on AI in general, as the idea is to discuss about measures that could be applied to the whole society. However, future research could focus on more precisely generative AI or other types of models that caused debate in recent times. In particular, more emphasis should be put on protecting user rights and ensuring ethical use of technology to safeguard customer data from misuse (Gursoy et al., 2025) and to prevent data breaches (Sobrino-García, 2021).

6 CONCLUSION

This paper provides a holistic perspective on the measures that stakeholders in the information society can take to mitigate ethical challenges related to the use of AI. Research findings were analysed based on four key stakeholder groups: policymakers, AI innovators, business leaders, and individuals. For each stakeholder group, the literature offers solutions proposed by authors to address common ethical challenges such as bias, lack of transparency, and data reliability. Based on the analysis of 22 most significant articles, it can be concluded that the majority of authors emphasize collaboration among stakeholders as essential for creating an information society that applies AI ethically. To answer our research question, the synthesis highlights key measures that stakeholders can implement to promote the ethical use of AI: technical, organizational, regulatory, and individual measures. Stakeholders are the main actors who can implement these measures. Regarding that: (1) policymakers should develop clear

regulations and education programs, (2) AI innovators must embed ethical principles in system design and continuously monitor outputs, (3) business leaders are responsible for establishing ethical AI policies and addressing biases; and (4) individuals need to be educated, critically assess AI- generated content, protect their privacy, and use AI responsibly. When taken as a whole, these steps encourage the information society's responsible development and application of AI.

Robustness of the findings can be established by comparing the given results with established guidelines, such as the European Commission's Ethics guidelines for trustworthy AI. For example, technical measures mainly address transparency, fairness, and non-discrimination principles. Organizational measures put focus on ensuring privacy and data governance, as well as promoting human oversight of AI technology. Regulation measures focus on creating an environment to ensure AI serves humanity safely and responsibly. Based on this, these findings align with Floridi and Cowls' (2019) unified framework of five principles for AI in society: beneficence, non-maleficence, autonomy, justice, and explicability. Along with this, this paper discusses measures that stakeholders can take to mitigate crucial AI risks, and the main ideas align with well-established guidelines for ethical AI usage.

Ethical AI development begins with AI innovators, who need to design and develop AI systems that are free from biases, transparent, and promote fairness. Organizations must then adopt measures during the deployment of these systems to ensure security and privacy are preserved, as well as to conduct regular AI audits, reporting, and education to their employees. Despite these measures, individuals must use AI responsibly and ethically by paying attention to the information they share and critically evaluating the given results. Finally, regulations and standards should be established to provide overall AI governance. Essential to this process is collaboration among all stakeholders and bringing together diverse skills to build a strong and responsible AI society.

ADDITIONAL INFORMATION AND DECLARATIONS

Conflict of Interests: The authors declare no conflict of interest.

Author Contributions: M.K.: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, Writing – Original draft preparation, Writing – Reviewing and Editing. R.M.: Supervision, Validation, Writing – Reviewing and Editing.

Statement on the Use of Artificial Intelligence Tools: The authors declare that they didn't use artificial intelligence tools for text or other media generation in this article.

Data Availability: The data that support the findings of this study are available from the corresponding author.

APPENDIX A

Table A1. *Selected articles through the PRISMA-ScR approach (articles published in Q1 and Q2 journals with at least 3 citations), sorted by year.*

No.	Authors	Title	Year	Source title	Cited
1.	Iphofen & Kritikos, 2021	Regulating artificial intelligence and robotics: ethics by design in a digital society	2021	Contemporary Social Science	66
2.	Weber-Lewerenz, 2021	Corporate digital responsibility (CDR) in construction engineering-ethical guidelines for the application of digital transformation and artificial intelligence (AI) in user practice	2021	SN Applied Sciences	40
3.	Sobrino-García, 2021	Artificial intelligence risks and challenges in the Spanish public administration: An exploratory analysis through expert judgements	2021	Administrative Sciences	23
4.	Emmert-Streib, 2021	From the Digital Data Revolution toward a Digital Society: Pervasiveness of Artificial Intelligence	2021	Machine Learning and Knowledge Extraction	18
5.	Bruneault & Laflamme, 2021	AI Ethics: how can information ethics provide a framework to avoid usual conceptual pitfalls? An Overview	2021	AI and Society	8
6.	Malik et al., 2022	Impact of artificial intelligence on employees working in industry 4.0 led organizations	2022	International Journal of Manpower	264

No.	Authors	Title	Year	Source title	Cited
7.	Saurabh et al., 2022	AI led ethical digital transformation: framework, research and managerial implications	2022	Journal of Information, Communication and Ethics in Society	32
8.	Dwivedi et al., 2023	"So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy	2023	International Journal of Information Management	2712
9.	Gupta et al., 2023	From ChatGPT to ThreatGPT: Impact of Generative AI in Cybersecurity and Privacy	2023	IEEE Access	468
10.	Wach et al., 2023	The dark side of generative artificial intelligence: A critical analysis of controversies and risks of ChatGPT	2023	Entrepreneurial Business and Economics Review	393
11.	Heyder et al., 2023	Ethical management of human-AI interaction: Theory development review	2023	Journal of Strategic Information Systems	43
12.	Zhang et al., 2023	Fairness in Design: A Framework for Facilitating Ethical Artificial Intelligence Designs	2023	International Journal of Crowd Science	26
13.	Adel et al., 2024	ChatGPT Promises and Challenges in Education: Computational and Ethical Perspectives	2024	Education Sciences	49
14.	Fenwick et al., 2024	The critical role of HRM in AI-driven digital transformation: a paradigm shift to enable firms to move from AI implementation to human-centric adoption	2024	Discover Artificial Intelligence	43
15.	Alves et al., 2024	Use of Artificial Intelligence tools in supporting decision-making in hospital management	2024	BMC Health Services Research	15
16.	Aguila et al., 2024	Examining Artificial Intelligence and Law as a Tool for Legal Service, Decision-making, Job Transformation, and Ethical Performance	2024	Journal of Internet Services and Information Security	3
17.	Al-Kfairy, 2025	Strategic Integration of Generative AI in Organizational Settings: Applications, Challenges and Adoption Requirements	2025	IEEE Engineering Management Review	16
18.	Sai et al., 2025	Generative AI for Industry 5.0: Analyzing the Impact of ChatGPT, DALLE, and Other Models	2025	IEEE Open Journal of the Communications Society	15
19.	Tunçalp, 2025	Directing the future: artificial intelligence integration in family businesses	2025	Journal of Family Business Management	13
20.	Gursoy et al., 2025	Corporate digital responsibility: navigating ethical, societal, and environmental challenges in the digital age and exploring future research directions	2025	Journal of Hospitality Marketing & Management	10
21.	Sun et al., 2025	In the era of responsible artificial intelligence and digitalization: business group digitalization, operations and subsidiary performance	2025	Annals of Operations Research	9
22.	Machucho-Cadena & Ortiz, 2025	The Impacts of Artificial Intelligence on Business Innovation: A Comprehensive Review of Applications, Organizational Challenges, and Ethical Considerations	2025	Systems	4

Table A2. *Synthesis of article characteristics and perspective.*

Title	Focus	Methods	Perspective
From ChatGPT to ThreatGPT: Impact of Generative AI in Cybersecurity and Privacy (Gupta et al., 2023)	Generative AI adoption in cybersecurity and privacy	systematic research; demonstrating attacks and defense mechanisms	AI development
Ethical management of human-AI interaction: Theory development review (Heyder et al., 2023)	Human-AI interaction	theoretical review	AI development
Fairness in Design: A Framework for Facilitating Ethical Artificial Intelligence Designs (Zhang et al., 2023)	Ethical AI design (fairness)	proposing framework	AI development
Directing the future: artificial intelligence integration in family businesses (Tunçalp, 2025)	AI adoption in family businesses	interview (with decision-makers within the family businesses in Turkey)	Business

Title	Focus	Methods	Perspective
The Impacts of Artificial Intelligence on Business Innovation: A Comprehensive Review of Applications, Organizational Challenges, and Ethical Considerations (Machucho-Cadena & Ortiz, 2025)	AI-driven business innovations	systematic literature review (PRISMA)	Business
Strategic Integration of Generative AI in Organizational Settings: Applications, Challenges and Adoption Requirements (Al-Kfairy, 2025)	Generative AI adoption in organizations	literature review	Business (small and medium-sized enterprises - SMEs)
Corporate digital responsibility (CDR) in construction engineering-ethical guidelines for the application of digital transformation and artificial intelligence (AI) in user practice (Weber-Lewerenz, 2021)	AI adoption in construction (Corporate digital responsibility)	case studies and interviewing experts (30 leading experts from research, politics, and business in Germany)	Business (corporate culture, policy making, ethical guidelines)
AI led ethical digital transformation: framework, research and managerial implications (Saurabh et al., 2022)	AI and digital transformation	qualitative research method (23 in-depth interviews, content analysis)	Business (decision makers, researchers)
Impact of artificial intelligence on employees working in industry 4.0 led organizations (Malik et al., 2022)	AI adoption (employee experiences)	semi-structured interviews (32 professionals)	Business (employees)
The critical role of HRM in AI-driven digital transformation: a paradigm shift to enable firms to move from AI implementation to human-centric adoption (Fenwick et al., 2024)	AI and human resource management	literature review	Business (Human Resource Management - HRM)
Generative AI for Industry 5.0: Analyzing the Impact of ChatGPT, DALLE, and Other Models (Sai et al., 2025)	Generative AI (Industry 5.0)	review (examination of GenAI applications)	Business (Industry 5.0)
The dark side of generative artificial intelligence: A critical analysis of controversies and risks of ChatGPT (Wach et al., 2023)	Generative AI adoption in management and economics	narrative and critical literature review	Business (management), holistic view
Corporate digital responsibility: navigating ethical, societal, and environmental challenges in the digital age and exploring future research directions (Gursoy et al., 2025)	AI and corporate digital responsibility	systematic review (hospitality companies)	Business (managers)
In the era of responsible artificial intelligence and digitalization: business group digitalization, operations and subsidiary performance (Sun et al., 2025)	Responsible use of AI in the business sector	survey (202 subsidiaries of business groups operating in China)	Business (operations management)
Use of Artificial Intelligence tools in supporting decision-making in hospital management (Alves et al., 2024)	AI adoption in health services	semi-structured interviews (15 hospitals)	Business (hospital management)
Examining Artificial Intelligence and Law as a Tool for Legal Service, Decision-making, Job Transformation, and Ethical Performance (Aguila et al., 2024)	AI and law	literature review	Government (law)
Regulating artificial intelligence and robotics: ethics by design in a digital society (Iphofen & Kritikos, 2021)	Ethical AI design (morality and regulations)	literature review	Government (policymakers, ethical AI development)
Artificial intelligence risks and challenges in the Spanish public administration: An exploratory analysis through expert judgements (Sobrino-García, 2021)	AI in public administration	semi-structured interviews (with 14 experts from academia, the private sector, and government in Spain)	Government (public administration)
"So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy (Dwivedi et al., 2023)	Generative AI (critical review)	43 contributions from experts in various fields	Holistic
From the Digital Data Revolution toward a Digital Society: Pervasiveness of Artificial Intelligence (Emmert-Streib, 2021)	AI systems and digital data	literature review	Holistic

Title	Focus	Methods	Perspective
AI Ethics: how can information ethics provide a framework to avoid usual conceptual pitfalls? An Overview (Bruneault & Laflamme, 2021)	AI ethics	theoretical review	Holistic
ChatGPT Promises and Challenges in Education: Computational and Ethical Perspectives (Adel et al., 2024)	Generative AI in education	systematic literature review, interest analysis, and case studies	Holistic (educators, policymakers, researchers

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