Promoting 'Responsible AI' In India: A Sustainable Approach to Legal and Ethical Issues

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Abstract

The article examines the increasing adoption of Artificial Intelligence (AI) across various sectors in India, driven by its tech-savvy population and high internet penetration, while also noting the current absence of a specific AI regulatory framework. It critically assesses ethical concerns in the Indian context, compares regulatory approaches in other Asian countries, and evaluates India's policies against the UN's directives and ethical principles for AI regulation. The paper underscores the importance of responsible AI development and deployment, aligning with UN principles that prioritise human rights, safety, fairness, transparency, accountability, and human oversight. Furthermore, it examines the potential of AI to contribute to sustainability, referencing the UN Sustainable Development Goals (such as SDGs 9, 10 and 17), while also acknowledging the environmental impact of AI technologies. The article concludes by advocating for a robust AI framework in India that safeguards individual liberties and promotes societal well-being in line with global ethical standards, emphasizing the importance of international collaboration, public engagement, and a commitment to human rights.

Keywords: *Artificial Intelligence (AI), United Nations (UN), Sustainability, Regulation, Law, Ethics, India.*

1. Introduction

India is actively exploring and adopting AI technologies across various sectors, with a growing awareness of its economic potential. The country is also participating in international collaborations related to AI research. However, AI initiatives remain a major challenge due to a high incidence of failure in the implementation (Ali & Khan, 2024). A significant number of Indian companies, especially in the Consumer Goods (CG) and Industrial Goods (IG) sectors, are considered laggards in AI maturity. There's a noted need for strategic planning, talent development, and a focus on specific business problems that AI can solve (Sarawgi et al., 2023).

AI is seen as a transformative force, with the potential to reshape traditional business models. It is expected to have a substantial impact on various sectors. Specific studies are focusing on the Small and Medium Enterprises (SME) sector and healthcare organizations in India (Srivastava, 2018). The banking sector is seeing a significant shift toward AI-based systems. The COVID-19 pandemic has accelerated AI adoption, which is being leveraged to improve stakeholder experience, automate tasks, boost customer service, detect fraud, and optimize investments. There's a push for the service industry to incorporate AI to meet consumer demands for quicker and better 24/7 services (Reddy & Padmalatha, 2024; Yoganandham et al., 2023).

Several factors influence AI readiness in India, such as "organizational IT infrastructure, top management support, resource availability, collaborative culture, organizational size, capabilities, data quality, and financial budget". Other key factors are digital infrastructure, regulatory frameworks, technical skills, funding, cultural differences, government support, data quality, and cooperation between academia, industry, and government (Reddy & Padmalatha, 2024). There is also a recognition of the need for regulations for AI deployment, especially in transportation and healthcare, and for policies to make public data available to developers. There is a need to address variations in digital infrastructure and internet connectivity. The government can play a role by providing tax incentives for AI research and innovation and upgrading educational curricula (Jena, 2024).

This paper explores the adoption of AI across various sectors and the current regulatory framework and policies surrounding it in India. This framework will be critically examined for any gaps in compliance with international standards. Finally, it will analyse

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how the current policy framework can be better aligned with international standards and made more robust for the future.

2. Applications of AI in India

Due to India's young tech-savvy population and the growth of internet users, there has been a significant rise in the use of AI across various sectors, including finance, retail, manufacturing, and healthcare.

Financial institutions have been adopting AI for fraud detection, customer service, cybersecurity, and risk management (ICAI, 2024). This involves running big data through AI algorithms, identifying patterns of behaviours they represent, which usually indicate some form of fraud, and alerting stakeholders in the process when anomalies arise (Doshi & Pillai, 2024). AI is also having a significant impact on credit assessment, investment risk simulations, and early risk warning systems (Rai, 2024). Prominent examples include JPMorgan Chase, and Vanguard, which utilise AI for robo-advisory services (Shubham & Dhamiwal, 2023).

The retail sector is witnessing a substantial increase in AI adoption, with spending projected to reach $55.53 billion by 2030. This highlights the recognition among Indian retailers of AI's transformative potential (Mathew, 2024). Currently, AI is being implemented for demand forecasting, dynamic pricing, customer segmentation, personalized advertising, and enhancing customer service (India Retailing Bureau, 2024). Numerous companies are actively using AI in their operations. For example, Aditya Birla Fashion and Retail Ltd and Arvind Fashion leverage AI to offer personalized shopping experiences, while Bata uses it to analyse sales and customer satisfaction. Other retailers like Blackberry, Reliance, Lenskart, Tata Cliq, and Nykaa are also utilizing AI for various purposes, including personalized marketing campaigns, demand forecasting, customer behaviour analysis, and AI-powered chatbots for customer support (Krishna, 2022; Mehra, 2021).

AI is also transforming the manufacturing sector. Key applications include quality control, inventory management, predictive maintenance, and process optimization (Invest India, 2022). AI aids in identifying defects in products, efficiently managing stock levels, predicting potential downtime for machinery, and identifying bottlenecks in production processes (Research and Markets, 2024). Hyundai Motors serves as a prime example of a

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company employing AI for defect detection, inventory management, and minimizing disruptions and downtime (Mandurnekar, 2024).

The healthcare sector has embraced AI for a considerable period, using it for early disease detection, treatment planning, administrative task optimization, and medical research (Paul et al., 2018). AI algorithms analyse medical records, encompassing genetic information and medical images, to identify potential health risks and aid in early diagnosis (Das et al., 2024). This technology is particularly effective in detecting conditions like cancer, Alzheimer's, and Parkinson's disease, thereby improving the chances of successful treatment. AI also analyses population health data to identify the nature and epidemic potential of diseases (Nair & Sethumadhavan, 2022; Stanly, 2023). While companies like HealthifyMe employ AI-powered assistants for personalized fitness and nutrition plans, PharmEasy uses AI for efficient supply chain management and optimized delivery routes (Geetika et al., 2023).

3. AI Regulation in India and Other Asian Countries

By prioritising voluntary guidelines, industry best practices, and sectoral regulations, Singapore has adopted a "soft law" approach to AI regulation. The state's emphasis on self-regulation and a pro-business environment is intended to foster a thriving AI industry (Xu et al., 2024). Singapore's AI governance journey was initiated with the introduction of ethical principles, such as the FEAT principles for the financial sector and the Model AI Governance Framework. The government has continued to refine its soft law approach through the National AI Strategy, focusing on generative AI, launching initiatives like the AI Verify Foundation, and leveraging existing regulatory frameworks to address AI-related concerns (Chng & Jones, 2024). Singapore's AI governance model balances innovation with responsibility while maintaining flexibility and adaptability. The government's focus is on fostering trust and collaboration between the government, industry, and the public (Lee, 2024).

Japan's journey in AI regulation has been marked by a transition from a soft law approach to a more hybrid model incorporating hard law elements. While Japan emphasizes "responsible AI," it is equally interested in setting standards and enforcing compliance in the AI domain (Xu et al., 2024). In the initial stages, Japan, much like Singapore, prioritized voluntary guidelines and ethical principles to foster innovation while encouraging

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responsible AI development. Key initiatives included "Social Principles of Human-Centric AI" in 2019 and the establishment of the AI Strategy Council in 2023 (Kamiya & Keate, 2024). However, with the growth of AI technology, especially generative AI, concerns about potential risks such as bias and misinformation have prompted the government to adopt stricter legal measures. This has led to the introduction of the 2024 Draft AI Guidelines for Business and the proposed AI Bill, which aims for a more concrete "legal framework for AI governance" (GR Japan, 2024).

China's AI regulatory landscape is characterized by a rapid evolution from a reactive, targeted approach to a more proactive and comprehensive strategy. Initially, China focused on addressing specific concerns related to AI's potential impact on social stability and political control. This led to early regulations on content moderation, deepfakes, and algorithmic bias (Sheehan, 2024). Recently, there has been an increasing emphasis on "trustworthy AI" and risk management, as well as the expansion of the algorithm registry (Trustible, 2023). The key feature of its AI governance model is the government's strong emphasis on centralized control (Xu et al., 2024).

India does not have a regulatory framework for AI; it has AI policy frameworks that guide AI regulation. The laws it does have revolve more around data protection and security, which is also an important aspect that needs to be regulated for AI. The "Information Technology Act of 2000 (IT Act 2000)" and its 2008 amendment address data protection by regulating personal information collection and outlining compensations for data protection failures, also establishing a Cyber Appellate Tribunal. The "Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules of 2011 (SPDI Rules, 2011)" define rules for handling sensitive personal data, including the need for a privacy policy, consumer consent before data collection, and the right for citizens to audit, change, and revoke consent (Ministry of Electronics & Information Technology, 2011). The "Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules of 2021" regulate online news content, OTT platforms, and online gaming platforms, including regulations for collecting and storing personal user data. The "Digital Personal Data Protection Act of 2023 (DPDP Act, 2023)" aims to protect individuals' digital information, mandating explicit consent for data processing with exceptions for government services, national security, and legal matters. The "Digital Personal Data Protection Rules of

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2025" provide a structured framework to enforce "the DPDP Act, 2023", clarifying aspects such as consent management and security safeguards, while exempting specific categories of data fiduciaries.

To become a global leader in AI, India has designed an AI ecosystem in the country to promote AI-enabled solutions for social good and inclusive growth. The Ministry of Commerce and Industry (2018) has identified challenges to AI adoption and made recommendations for government regulation in data collection and management. The MeitY policy framework in 2019 set up four committees to address the legal, ethical, and cybersecurity challenges surrounding AI. Committee A's report highlighted the need for a robust AI ecosystem and proposed the creation of "the National Artificial Intelligence Resource Platform" (NAIRP) (MeitY, 2019a). Committee B's report proposed a framework for applying AI across different sectors and emphasized the importance of a collaborative research approach (MeitY, 2019b). Committee C's report emphasized the need for India to harness AI for social, economic, and strategic progress, while recommending a regulatory framework that enables innovation (MeitY, 2019c). Committee D's report analysed the relationship between AI and cybersecurity, highlighting the need to safeguard AI models and data from manipulation and privacy attacks (MeitY, 2019d). NITI Aayog's "National Strategy for Artificial Intelligence" outlined India's approach to becoming a leader in AI, identifying key sectors for AI intervention and proposing solutions focused on boosting research, data democratization, and reskilling the workforce (NITI Aayog, 2018). The strategy was updated in 2021 to highlight Responsible AI for all in two parts, outlining ethical principles and analysing challenges arising from AI systems. Part 1 – Principles for Responsible AI outlined seven ethical AI principles inspired by the Indian Constitution (NITI Aayog, 2021a). Part 2 – Operationalizing Principles for Responsible AI outlined that the government, private sector, and academia have key roles in creating a responsible AI ecosystem (NITI Aayog, 2021b). "IndiaAI mission, 2024", the strategic initiative of the government, highlights its dedication to establishing an inclusive AI ecosystem that aligns with the country's development goals.

4. UN Directives on AI Regulation

The "World Health Organization (WHO)" published a "guidance document" in 2021 focusing on the "ethics" and "governance" of artificial intelligence in the health sector, which

is a framework for the responsible creation and application of AI in this field. This document is aimed at diverse stakeholders, including government ministries, AI developers, and healthcare providers, advocating for collective action to ensure that AI technologies are used to better humanity rather than for surveillance or commercial exploitation (WHO Guidance, 2021). It underlines the significance of ethical standards throughout the technology's lifecycle. Recognising AI as a rapidly evolving field, the guidance emphasizes the need for continuous updates and addresses the effects of the COVID-19 pandemic on AI use in healthcare, both in terms of opportunities and ethical concerns. This document is aimed at diverse stakeholders, including government ministries, AI developers, and healthcare providers, advocating for collective action to ensure that AI technologies are used to better humanity rather than for surveillance or commercial exploitation (WHO Guidance, 2021).

"United Nations Activities on Artificial Intelligence Report, 2021", coordinated by the International Telecommunication Union (ITU), serves as the directory of AI projects and initiatives within the UN system, involving 40 entities and 228 projects. The report highlights the UN's dedication to using AI to advance the Sustainable Development Goals (SDGs), especially in health, infrastructure, inequality reduction, and responsible consumption, while stressing the importance of collaborative partnerships (United Nations, 2021). The projects are designed to produce tangible outcomes like reports and software, with most being ongoing at the time of the report (United Nations, 2021).

The "United Nations Educational, Scientific and Cultural Organization (UNESCO)" had adopted recommendations on the ethics of AI, encompassing systems primarily related to education, science, culture, communication, and information in 2021. (Zaidan & Ibrahim, 2024). The UN document, "Principles for the Ethical Use of AI in the UN System", of 20 September 2022, presents ethical guidelines for AI use within the United Nations, recognising the negative effects of AI on societies, the environment, and human lives. These principles aim to ensure AI benefits humanity and the planet, aligning with the UN Charter and human rights laws, defining AI systems as those that mimic human intelligence in data processing (UNSCEB, 2022). The ethical framework necessitates assessment throughout the AI lifecycle, emphasising trustworthy AI that prioritises human dignity, equality, environmental preservation, and data responsibility. The document advocates for implementation guidance, including ethical assessments, policy reviews, and governance systems, highlighting key

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principles such as avoiding harm, ensuring justified and proportionate AI use, promoting safety, fairness, non-discrimination, and sustainability, while also addressing privacy, data protection, human autonomy, transparency, accountability, and inclusion (UNSCEB, 2022).

The "United Nations Activities on Artificial Intelligence,2023" released at "AI for Good Global Summit, 2024", is a collaboration between the ITU and 46 UN agencies, showcasing AI projects related to all 17 Sustainable Development Goals (SDGs). It aims to promote collaboration and understanding of emerging AI technologies, including new chapters from seven additional entities. Submissions were harmonized and analyzed based on SDGs addressed (United Nations, 2023). The report includes AI-related activities from various UN organizations. Approximately 83% of submissions linked their projects to specific SDGs, with many addressing multiple goals, and SDGs 9, "Industry, Innovation, and Infrastructure", 10 "Reduced Inequalities", and 17, "Partnerships for the Goals" being the most commonly addressed. There is a noted increase in projects focusing on SDG 13, though more attention is still needed on SDGs 6, "Clean Water and Sanitation", 7, "Affordable and Clean Energy", 14, "Life Below Water", and 15, "Life on Land". Multi-stakeholder collaborations are prioritized, with nearly 60% of UN projects reporting collaborations across various sectors (United Nations, 2023).

A draft resolution from the United Nations General Assembly, dated 11th March 2024, addresses harnessing AI for sustainable development, acknowledging both its opportunities and risks. The resolution stresses that AI systems must be "human-centric, reliable, ethical, and inclusive, respecting human rights and international law." It recognizes the need to bridge the digital divide, especially between developed and developing countries, advocating for capacity building and technical assistance (United Nations, 2024c). This aims to support developing countries in bridging the digital divide and spreading digital literacy, and can serve as a framework for future AI conversations (United Nations, 2024c). Over 120 member states signed the UN General Assembly resolution on 21st March 2024, "promoting safe, secure and trustworthy AI systems" to benefit sustainable development that emphasizes that AI systems should respect, protect, and promote human rights in their design and use. It acknowledges AI's potential to accelerate progress toward the Sustainable Development Goals and urges member states to cease using AI systems that do not comply with international human rights law or pose undue risk. The UN General Assembly resolution

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urges the international community to ensure that AI is developed with a focus on humanity, safety, security, human rights, and fundamental freedoms (Mishra, 2024).

The document "Harnessing Artificial Intelligence for SDGs," published on 8th May 2024, underscores the significance of using AI for sustainable development while addressing potential harms. (UNSDG, 2024). The document encourages a global conversation on leveraging technologies for sustainable development, urging Member States to help achieve the Sustainable Development Goals (SDGs). An open, safe, and secure digital future can be achieved through international cooperation, building a world where AI benefits all of humanity (UNSDG, 2024).

"The UN White Paper on Artificial Intelligence (AI) Governance", developed by the "Inter-Agency Working Group on Artificial Intelligence", co-led by the "ITU" and "UNESCO", with over 40 UN entities contributing, originally published on 9th August 2024, and reissued on 24th October 2024, entails international cooperation on AI governance due to the rapid development of AI technologies and potential risks (UNSCEB, 2024). Based on a UN system-wide survey and a review of global trends, the paper concludes with recommendations for enhancing AI governance efforts within the UN system (UNSCEB, 2024).

"Governing AI for Humanity: Final Report, 2024", by the UN High-level Advisory Body on Artificial Intelligence, highlights AI's transformative potential and the need for global governance to ensure equitable benefits and mitigate risks. The report proposes a holistic approach centred around a common understanding to mitigate the gaps in global AI governance due to existing fragmented norms and proposes an "international scientific panel on AI" to foster cooperation (United Nations, 2024b).

The Global Digital Compact, a key part of the Pact for the Future, is a framework for digital cooperation and AI governance, ensuring technology benefits all of humanity. Rooted in international law, including the UN Charter and "the 2030 Agenda for Sustainable Development", it outlines objectives, principles, commitments, and actions for an inclusive, open, sustainable, fair, safe, and secure digital future. It emphasizes addressing digital divides, promoting digital literacy, ensuring human rights in the digital space, and fostering responsible data governance (United Nations, 2024d). The Global Digital Compact emphasizes core principles including inclusive participation, development orientation,

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adherence to international law and human rights, gender equality, environmental sustainability, equitable distribution of digital benefits, accessibility, interoperability, and responsible development of emerging technologies. These principles aim to ensure digital technologies contribute to the SDGs and leave no one behind (United Nations, 2024a). The Compact includes commitments for achieving its objectives, such as connecting all people to the internet by 2030 and establishing digital public goods. It addresses misinformation, data privacy, and the ethical use of AI, establishing an Independent International Scientific Panel on AI and a Global Dialogue on AI Governance within the United Nations (United Nations, 2024a).

The "Paris AI Action Summit, 2025" and "Statement on Inclusive and Sustainable Artificial Intelligence for People and the Planet, 2025", proclaims that AI is open, ethical, safe, and trustworthy, enabling innovation, encouraging AI deployment that positively shapes the future of work, making AI sustainable, and reinforcing international cooperation (Prime Minister of Canada, 2025). A Public Interest AI Platform and Incubator was launched to support public and private initiatives and address digital divides. The statement recognizes the need to enhance knowledge of AI impacts in the job market and foster inclusive dialogues on AI governance (Prime Minister of Canada, 2025).

Recently, remarks made by the UN Secretary-General at the AI Action Summit 2025 addressed AI's rapid development and its unequal distribution, which risks deepening geopolitical divides. The UN is strengthening its platform for AI solidarity, advocating for a global approach to AI governance and capacity building (UNSDG, 2025). His remarks highlight the importance of sustainable AI, noting that AI systems are straining the planet through energy use and emphasizing the need to design energy-efficient AI systems. The speech concludes with a call for global cooperation in shaping AI's future, addressing questions of who decides what problems AI should solve, who benefits the most, and who bears the cost of its mistakes (UNSDG, 2025).

5. Incorporating UN Directives into the Proposed Indian Policy Frameworks

The AI Task Force report, MeitY frameworks and NITI Aayog's NSAI will be evaluated via directives provided by the United Nations. The core belief behind the UN directives is that AI should be developed and used for the benefit of humanity while upholding human rights

and promoting inclusivity and sustainability. This belief is rooted in the recognition that AI has profound and dynamic impacts on societies, the environment, ecosystems, and human lives.

Firstly, AI systems should be built in such a way that they do not directly or indirectly harm anyone, but uphold human rights. The impact of AI systems should be constantly monitored (United Nations, 2024a; United Nations, 2024b; UNSCEB, 2022; WHO Guidance, 2021; Zaidan & Ibrahim, 2024). Second, there should be a clear purpose defined for the use of AI systems. They should not exceed what is necessary to achieve their intended goals, and these goals should align with the UN's mandates (UNSCEB, 2022). Third, risks to safety and security should be identified early on while the AI system is being developed to prevent harm to humans, the environment, and ecosystems. Robust frameworks should be in place to ensure that the use of AI systems is safe (United Nations, 2024a; United Nations, 2024b; United Nations, 2024c; UNSCEB, 2022; Zaidan & Ibrahim, 2024). Fourth, AI systems should promote fairness and avoid bias, discrimination, and stigmatization. They should not deceive individuals or infringe upon their human rights and freedoms (United Nations, 2024b; United Nations, 2024c; UNSCEB, 2022; Zaidan & Ibrahim, 2024). Fifth, AI should be used for all-round sustainability. Impacts on present and future generations should be assessed, and measures should be taken to address any adverse effects (United Nations, 2024a; UNSCEB, 2022; WHO Guidance, 2021; Zaidan & Ibrahim, 2024). Sixth, the privacy of individuals and their rights as data subjects must be protected throughout the AI system lifecycle. Adequate data protection frameworks and governance mechanisms should be established to ensure data integrity (United Nations, 2024a; United Nations, 2024b; United Nations, 2024c; UNSCEB, 2022; Zaidan & Ibrahim, 2024).

Seventh, AI systems should not override human autonomy. Human supervision is essential at all stages of the AI system lifecycle to make sure that humans retain control and can override decisions made by AI systems, when necessary, especially in matters of life and death or those impacting fundamental human rights (UNSCEB, 2022; WHO Guidance, 2021; Zaidan & Ibrahim, 2024). Eight, the decision-making should be transparent and explainable to humans. Individuals impacted by AI-driven decisions should have access to the reasons for those decisions (United Nations, 2024b; United Nations, 2024c; UNSCEB, 2022; WHO Guidance, 2021; Zaidan & Ibrahim, 2024). Ninth, accountability mechanisms should be in

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place to address the impacts of AI systems. Governance structures should clearly define responsibility for AI-related decisions. Harms caused by AI systems should be investigated, and appropriate actions taken (United Nations, 2024c; UNSCEB, 2022; WHO Guidance, 2021; Zaidan & Ibrahim, 2024). Tenth, the development of AI systems should involve consultations with relevant stakeholders and affected communities. This process should be inclusive and interdisciplinary, and promote gender equality (United Nations, 2024a; United Nations, 2024b; UNSCEB, 2022; WHO Guidance, 2021). Eleventh, AI technologies should be assessed continuously to ensure they are responsive to evolving and diverse needs (United Nations, 2024c; WHO Guidance, 2021). Twelfth, "there needs to be collaboration between various stakeholders and international cooperation for the governance of AI" (United Nations, 2024a; United Nations, 2024b; United Nations, 2024c; Zaidan & Ibrahim, 2024).

"The AI Task Force report", "the MeitY reports", and "NITI Aayog's NSAI and Responsible AI for All strategies" all emphasize the potential of AI to improve societal well-being in India. "The AI Task Force Report" focuses on identifying key sectors for AI deployment, while the "MeitY reports" highlight the importance of data platforms and cybersecurity. While all frameworks acknowledge the potential benefits of AI, they vary in their comprehensiveness in addressing ethical considerations and potential risks. All frameworks emphasize utilizing AI for societal good and minimizing potential harm, which aligns with the principle of Safety and Reliability. "The MeitY reports" and "the Responsible AI for All strategy" strongly advocate for safety and reliability through testing, validation, risk assessment, and mitigation strategies. However, "the AI Task Force Report" lacks a comprehensive analysis of potential negative impacts and needs specific measures to address AI misuse. Regarding purpose and alignment with societal goals, all frameworks demonstrate a commitment to leveraging AI for India's development. However, this brings up "the question of Purpose and Proportionality". "The AI Task Force Report" lacks clarity in the rationale behind sector selection for AI deployment and its alignment with societal well-being. The "NSAI" and "Responsible AI for All Strategies", however, emphasize a clear purpose for AI systems aligned with societal goals. The frameworks acknowledge the importance of Safety and Security, but "the AI Task Force Report" fails to address all potential risks comprehensively. "The MeitY reports" and "the Responsible AI for All strategy" advocate for robust security frameworks, risk assessment, and mitigation strategies.

Both "the MeitY reports" and "the NITI Aayog frameworks" promote fairness and non-discrimination through unbiased data collection, algorithm development, and strategies to address potential biases. The "AI Task Force Report" focuses on IP rights and potentially contradicts principles of open access and inclusivity. Sustainability is another important aspect. While not explicitly addressed in all frameworks, "the MeitY reports" and "the NITI Aayog frameworks" indirectly promote sustainability through efficient resource utilization and focus on key sectors like agriculture and healthcare. Privacy and data protection are major concerns in AI development. The "AI Task Force Report" inadequately addresses data privacy and individual rights. The "MeitY reports" and "the NITI Aayog frameworks" emphasize data privacy and protection through robust data governance policies, data protection frameworks, and adherence to privacy standards. "Human Autonomy and Oversight" is crucial to ensure responsible AI. The "AI Task Force Report" falls short of proposing concrete measures to ensure human autonomy and oversight. The "MeitY reports" and "the NITI Aayog frameworks" emphasize human oversight, control, and ethical considerations.

The frameworks vary in their approach to "transparency and explainability". Although the "AI Task Force Report" doesn't discuss explainability much and lacks specific recommendations for transparency, the "MeitY reports" and the "NITI Aayog frameworks" advocate transparency. Accountability mechanisms are a common theme, albeit with varying levels of detail. The "AI Task Force Report" hints at accountability mechanisms but lacks specific definitions of responsibility and redress mechanisms. The "MeitY reports" and "the NITI Aayog frameworks" recommend responsibility, accountability mechanisms, and governance structures for addressing potential harms. Stakeholder consultation and inclusiveness, which are essential for responsible AI development, are generally acknowledged. The "AI Task Force Report" fails to demonstrate a truly inclusive and interdisciplinary approach. The "MeitY reports" and "the NITI Aayog frameworks" emphasize stakeholder engagement, multi-stakeholder consultations, and inclusivity in "AI development and governance". Finally, continuous assessment and adaptation are recognized to varying extents. The AI Task Force Report lacks a forward-looking perspective on the long-term implications of AI and the need for ongoing evaluation. The "MeitY reports" and "the NITI Aayog frameworks" recognize the dynamic nature of AI and recommend continuous assessment, adaptation, and monitoring of AI systems and policies.

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From the above analysis, there are no concrete strategies or steps to transition from principles to actionable steps. There is also an absence of a robust AI personal data protection law, which undermines the policy's emphasis on privacy and security, which is critical for AI adoption. The frameworks also address the risks of algorithmic bias but lack specific mandates or mechanisms to audit and rectify these biases. While public-private partnerships are encouraged, there is limited emphasis on integrating AI into the "Micro, Small, and Medium Enterprises sector (MSME)", which forms the backbone of India's economy (Didachos & Tambunan, 2024).

6. Conclusion

India has adopted a hybrid approach to AI regulation, which has more soft law elements (ethical guidelines and voluntary principles) than hard law (binding regulations). India, like other Asian countries, is focusing on establishing foundational ethical principles and voluntary guidelines for responsible AI development to foster trust and encourage its use. These guidelines address key concerns like fairness, transparency, accountability, privacy, and human oversight. There is no urgent need for comprehensive and implementable AI regulation in India. Currently, India's policy, that is, "National Strategy for AI", addresses crucial aspects like data governance, ethical considerations, security, and privacy. The policy has already incorporated lessons from international best practices tailored to the Indian context (Poonia, 2023). This could involve industry-led working groups, platforms for knowledge sharing, and certification programs for responsible AI development.

In the future, sector-specific regulations, inspired by other Asian countries, especially Japan and China, could be implemented for high-risk sectors such as healthcare, finance, transportation, and law enforcement. This approach encourages tailored regulations that address the unique challenges of each domain. There should also be a prioritization of "high-risk" AI applications' regulation, particularly those involving critical infrastructure and areas impacting fundamental rights. Then the policy can mandate robust risk assessment frameworks to identify and mitigate potential harms and establish clear guidelines for data access, use, and sharing, particularly for AI development (Joshi, 2024; Mohanty & Sahu, 2024).

As AI technology evolves, India can gradually introduce hard law elements, like Japan's proposed AI Bill. This might include an AI regulatory body, impact assessments for

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high-risk systems, and mechanisms for auditing AI systems. Appointed regulatory bodies should be equipped with experts, governing power, investigative powers, and resources to effectively monitor and enforce compliance (Kapoor & Kalathil, 2024). There needs to be increased investment in AI research and development, establishing centers of research excellence, attracting foreign researchers, and fostering collaborations between academia and industry (Sinha et al., 2024). There also needs to be significant investment in AI-related education and training programs by integrating AI-centric learning into educational curricula, establishing specialized training centers, and creating certification programs to ensure a skilled AI workforce (Sayyed, 2024).

Gradually, India can foster an environment for greater public engagement and transparency in AI policymaking by conducting public consultations, engaging civil society organizations, and providing clear information about the potential benefits and risks of AI technologies (Dey & Cyrill, 2024). International collaboration is crucial for shaping international standards and aligning India's framework with global norms. Active participation in global discussions on AI governance would facilitate cross-border collaboration. This hybrid approach would balance innovation and risk mitigation, remain adaptable, foster collaboration, and ensure global alignment.

Thus, while India aspires to become a global leader in AI, it believes that its AI policy framework must be grounded in a commitment to protecting human rights. A robust framework that prioritizes fairness, transparency, accountability, and human oversight is essential to ensure the transformative potential of AI while safeguarding individual liberties and promoting societal well-being. Failing to address these critical considerations risks undermining public trust, exacerbating existing inequalities, and hindering the responsible development of this powerful technology.

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