TOWARDS A NOVEL ECLECTIC FRAMEWORK FOR ADMINISTERING ARTIFICIAL INTELLIGENCE TECHNOLOGIES: A PROPOSED 'PEEC' DOCTRINE

Dr. Neelkanth Bhatt[1], Jaikishen Bhatt[2]

[1]*Assistant Professor of Civil Engineering, L.E. College – Morbi, Gujarat, India*
[2]*Retired Social Security Officer, Employees' State Insurance Corporation, Ahmedabad, Gujarat, India*

ABSTRACT

Currently, there is no complete and effective framework that regulates Artificial Intelligence (AI). The study aims to bridge existing gaps and limitations of isolated regulations relating to AI technologies. At the outset, developmental evaluation approach was applied for exploring the possibilities of application of existing doctrines for development of holistic AI regulation that serves the local, national and international requirements. Subsequently, to bestow overall well-being of the society it is hypothesized that an eclectic regulations with due considerations to Public Interest, Environmental Sustainability, Economic Development and Criminal Law shall immensely contribute towards successful governing of AI technologies. A combination of these approaches is used to propose a novel 'PEEC' Framework for curbing the menace of AI systems while realizing its fullest potential. The proposed 'PEEC' framework addresses all potential imparity in AI regulation and lays down governing principles that can be used by the policymakers to make informed decision for governing AI where the stakeholders' interests are prioritized while retaining the core functions of regulating framework that bestow comfort, contentment, happiness, health, prosperity and protection to its citizens. Both, positive and negative impacts of proposed 'PEEC' framework on stakeholders are presented with suggestions to curtail its negative consequences. The study also proposed a 'PEEC Resolution' to be adopted by local, national or international authorities for administration of AI within their jurisdiction. The proposed 'PEEC' framework is a win-win proposition for all AI stakeholders
KEYWORDS: *Artificial Intelligence, Criminal Law, Economic Development, Environmental Sustainability, Public Interest, Regulations, Society.*

1. INTRODUCTION

Artificial intelligence (AI) is an expanding technology having potential to transform the global economy and a variety of industries [1]. AI is being used in various fields, including personalized learning sector [2], healthcare sector [3], manufacturing sector [4], finance sector [5], retail sector [6, 7], and the fine arts sector [8]. The potential benefits of AI in these sectors are substantial and have unlimited capacity to transform the way in which professionals work [9]. Besides loss of Jobs, there is also associated number of challenges that requires immediate attention like data privacy, biased programming and potential misuse of the AI technologies against the public at large.

AI technologies are impacting our daily life in a huge way. AI technologies are in use in our routine life by various means viz. Social media, online shopping, and transportation, healthcare and business activities [10]. The uses of AI technologies (creative thinking machines) pose before us numerous ethical issues all presenting an important question of how to prevent harm to humans from these machines [11]. Since, AI systems are trained and developed to learn from historical data which may incorporate biases, it is seldom possible to completely eradicate introduction of bias and resulting discrimination into AI systems [12]. Bias and discrimination in any form was never accepted by any civilization and nor will it be accepted in future too.

The other big challenge with AI technologies is its potential to be used for vile ulterior motives. AI could be used to create deep-fakes (these are videos or audio recordings that have been tinkered to portray as if to suggest that someone is saying or doing something they never said or did) and spread misinformation. Misinformation damages our trust in institutions; oppressing democracy and making it extremely difficult to deal with and solve complex problems [13]. Furthermore, recent reports do suggest use of AI systems for potential security threats in digital, physical and political domains [14]. Autonomous weapons developed using AI technologies could also be used to kill people without human intervention [15]. Undoubtedly, mankind cannot thrive or survive under this looming crisis of technological malicious weapons.

World over, there are very few set of AI regulations. Many of them are in negotiation stage or some are not rigorously implemented. The EU's Artificial Intelligence Act (AIA) – 2021 is in negotiation stage. The California Consumer Privacy Act (CCPA) – 2020 does only put forth specific provisions addressing the use of data by AI systems. The New York State Artificial Intelligence Policy Act (AI Policy Act) – 2021 mandates creation and implementation of guidelines for responsible AI

development and utilization within state. In United States, the Federal Trade Commission (FTC) – 2020 established AI Principles with a view to safeguard consumer interests, and foster healthy completion.

It is in these contexts, that it becomes imperative for us to critically think upon the future of AI technologies and come up with universal regulating policies that not only allows the use of AI for public interest but also restrain its potential risks. Currently, the private sector plays a pivotal role in development of AI technologies. Depending on the needs and caprice of large companies certain private entities may develop AI technologies to suite their requirements that may not always prioritize public interest. There is no robust framework for regulating AI at national and international level.

Butcher & Beridze, 2019 [16] argues that to make use of AI in a responsible and ethical manner we need to have in place a coordinated approach at international levels to AI governance. Numerous reports from the past decade suggest AI has a potential to both benefit and harm the society and that regulating AI is complex and challenging task as the technology is constantly evolving; for us to have effective and adaptable regulations, we need to have a consensus on unambiguous definition and potential risks of AI at all levels, which is lacking [17, 18, 19, 20 & 21].

This study aims to bridge the existing gap and limitations vis-à-vis AI regulations. Firstly, the study employs developmental evaluation approach to explore the possibilities of application of existing doctrines for developing a holistic AI regulation to suit regional, national and international boundaries. Secondly, in realm of ubiquity of AI technologies, to support the theory that an eclectic regulations with due considerations to Public Interest, Environmental Sustainability, Economic Development and Criminal Law ('PEEC') immensely contribute in governing AI with a view to bestow the overall well-being of the society. Together, the two approaches are applied to propose a novel 'PEEC' doctrine to be applied to AI technologies.

2. CHEMISTRY OF AI AND EXISTING DOCTRINES

Worldwide various philosophies are in use for numerous social causes which include 'Utilitarianism', 'Human Rights', 'Feminism', 'Environmentalism', 'Socialism', 'Non-violence', 'Social Justice', 'Communitarianism', 'Global Solidarity' and 'Animal Rights'. However, since the AI technologies are massively impacting all facets of the society it would be simply apt to consider only those legal philosophies that forms the main component of a society viz. the shared set of norms, values, beliefs and attitudes, the generated and utilized artefacts and the people itself. In this context, it is worth exploring the philosophies related to public interest, environmental sustainability, economic development and criminal law and its interaction with AI with due considerations to promote prosperity, well-being and high quality of life and to take care of the fundamental rights of the citizens.

Moreover, enacting a framework requires that the policymaker takes into account several important factors such as social needs, social emotions, unintentional events, public support and opinions, equality and equity, rights and duties of individual from society, cultural and social context, long-term impact, political feasibility, timing and priorities. Besides these, the policymakers are also faced with important question as to how the proposed law shall be implemented and enforced, and how it will be received by the society. These paradigms offer a background for understanding problems and determining suitable solutions. Unlike other field social science characteristics are quite distinct to either quantify or replicate and very rarely produce agreement regarding the importance of one factor over the other; in this context, some important components of public policies are public agenda, performers who react, interpret and respond to agendas, resources, institutions and the level of government [22]. 'Public Interest Doctrine', 'Environmental Sustainability Doctrine', 'Economic Development Doctrine' and 'Criminal Law Doctrine' all exhibit clarity, consistency, logic, comprehensiveness and appeal necessary for the policy. Besides, these doctrines to a large extent also contain features relating to policy for welfare of the society. Accordingly, these doctrines have been chosen for detailed evaluation for application to AI framework.

2.1 AI and Public Interest

Many experts are of the opinion that AI should be freely developed for all of us to fully realize its potential. On the other hand, some experts do not agree to this opinion citing public interest. For developing effective and adaptive regulating framework it is crucial to weigh the potential benefits and risks posed before us by AI technologies. Discrimination, privacy violations, security risks, loss of controls are some risk posed to public interest by AI and Improvement in efficiency in healthcare, education, transportation and environmental protection are some of the benefits of AI [23].

Zuger & Asghari (2023) [24] developed a framework based on public justification, equality, deliberations, technical safeguards, public scrutiny and validation and applied proposed framework to two case studies. Firstly, for SyRI, a Dutch welfare fraud detection project, and secondly, for UNICEF's Project Connect, which maps schools worldwide AI for the public. The authors duly considered the potential risks of AI and inferred that public interest theory can be vitally helpful in development of AI governance with emphasize on transparency, accountability and public participation in the development of AI systems.

Figure 1 shows the similarities and dissimilarities among elements of AI and public interest.
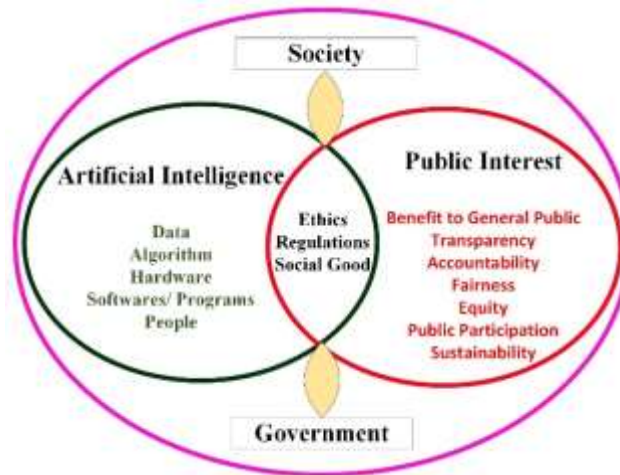
Figure 1 Interplay of Artificial Intelligence and Public Interest

2.2 AI and Environmental Sustainability

The concept of environmental sustainability is founded on pillars of social, economic, environment and governance. Use of AI systems for monitoring and improving biodiversity and energy efficiency and cutting down emissions from industries and vehicles are areas being explored by many researchers. However, there are associated negative consequences of use of AI for environment viz. exponential increase in energy consumption and introduction of altogether new pollutants [25]. Need is therefore felt to develop AI systems that are duly in line with environmental sustainability purposes and are effective in creating a sustainable future for all [25, 26, & 27].

The interplay among AI technologies, Environment, Society and Government (Figure 2) has to be understood for effective development of framework to be applied to AI systems.
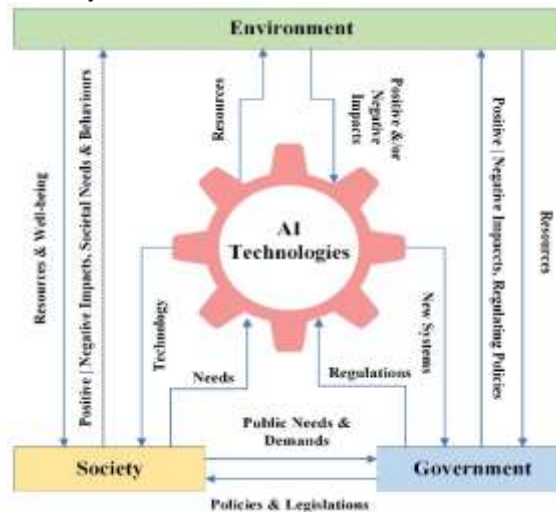

Figure 2 Interplay among AI technologies, Environment, Society and Government

Research evidences suggest that environmental sustainability can immensely benefit from AI systems. Political concerns relating to poverty alleviation, hunger, health, education, energy, water and climate change can all be efficiently addressed by employing AI. Though, it is crucial to develop and utilize AI in a manner that nullifies the potential negative impacts of this technology on environment [28, 29 & 30].

2.3 AI and Economic Development

Evidences from china suggest that AI has great potential to boost green economic growth however, level of deployment of AI systems, location and type of industries would govern such growth [31]. Researchers believe that we are yet to fully understand the impact of AI on productivity, innovation and inequality at the regional level. Regional planning, development, ethical and social implications of AI vary from region to region. In this context, the governance of AI system is a challenging task requiring an eclectic approach.

In the recent times, China has made significant progress in AI and thus is now considered to be a leading AI power. AI systems have immensely impacted economic development in china. China has invested heavily in research and development of AI for industries, in healthcare, agriculture and finance sector. Roberts et. al. (2023) [32] has scientifically studied the approaches of China and European Union (EU) and inferred that their approach in governing AI varies significantly. While the approach of China towards governing AI is top-down and focused on economic growth, the EU approach is more bottom-up and focused on human-rights and ethics. The article argues merit in both approaches but also emphasizes the need to strike a balance between economic development and human rights protection while dealing the potential risks of AI. For realizing fullest potential of AI it is extremely important to have a governance framework that is effective and adaptive to dynamics of social, political and economic contexts [33].

2.4 AI and Criminal Law
Ever increasing development and sophistication in AI raises numerous legal and ethical questions, more particularly in the field of criminal law. There is not much research and evidence suggesting the chemistry of AI and criminal law. Nonetheless, the most important question that requires our attention is whether a machine can be held responsible for a criminal act? For application of traditional criminal law the element of 'Mens Rea or guilty mind' has to be proved beyond doubt. But, AI systems do not have mind, they are just programed. However, if we define 'criminal liability' in more broad terms to include that the defendant's action caused harm then it is possible to govern AI under criminal laws. Though, yet again the next question would be who is to be held responsible, the programmer who created the algorithm of AI, the manufacturer / supporter, the user or the AI system itself or none. Hallevy (2013) [34] contend that we cannot regulate dynamics of AI development and its capabilities with existing traditional criminal law framework. Novel legal concepts and ethical frameworks are required to control and make accountable the ever developing AI technologies [34].

Lagioia & Sartor (2020) [35] argues creation of altogether a new legal category of "Autonomous AI Agents" for us to hold the actions of AI as criminally liable. The authors also propose "Reasonable AI Standards" that can be looked into while designing and developing AI programs and creation of regulatory bodies to oversee all developmental and designing tasks for AI.

3. LEVERAGING EXISTING LEGAL DOCTRINES FOR AI REGULATIONS
3.1 Public Interest
The doctrine of public interest rooted in English Common Law has a long history and is used by courts and governments to ensure broader welfare of the society against the actions by individuals, organizations and governments. It plays pivotal role in shaping policies and regulations at regional and national as well as international level. The doctrine has evolved and is still evolving reflecting the ongoing development of the societal values and the changing relationship between individuals and regulators.

For regulating AI the 'Public Interest Doctrine' provides a guiding principle that not only prioritizes needs and aspirations of the society but also ensures that the laws and policies guarantee social, cultural and political welfare of the society.

3.2 Environmental Sustainability
Judicial system around the world has been applying certain basic principles in adjudicating matters relating to environmental pollution/ degradation. These broad principles are presented at Table 1.

Table 1 Basic Principles used for Environmental Legislations

Principle	Comments
Precautionary Principle	This principle emphasizes the need to act proactively to scientific uncertainty with a view to avoid potential environmental harm (i.e. Prevention is better than Cure). Courts applies this principles in cases where activities polluting environment is barred / banned till it is demonstrated to the satisfaction of the court that the proposer shall undertake adequate measures to avoid/ cut-down potential environmental harm from proposed activity.
Polluters Pay Principle	This principle suggests that it is the polluter who shall make good/ bear the cost of environmental remediation/ cleaning-up. The financial responsibility is placed with the polluter rather than the general public or aggrieved parties. Courts use this principle to penalize the polluter with costs.
Public Trust Doctrine	This principle lays onus on government to preserve and protect natural resources such as air, water and environment. Courts use this principle for ensuring that government as public trustees take enough measures in protecting the natural resources for our future generations.
Strict Liability	This principle allows courts to held a party responsible for environmental pollution regardless of their negligence or fault, provided that there shall be enough evidence to suggest that the defendant's actions or operations has caused the environmental harm.
Absolute/ Severe	In cases where multiple parties has contributed to environmental harm, the application of this principle

& Joint Liability	allows court to grant compensation to affected person from a single or all parties responsible for pollution regardless of their individual contributions to the said pollution.
Sustainable Development	Recently, many courts consider this principle for adjudication of cases relating to environmental pollution. This principle lays down the need to balance economic development with environmental protection for the well-being of the society, with a view to preserve and protect our environment for our future generations.
Proportionality	In certain cases courts may apply this principle to penalize the offender in proportion to the gravity of damages and to arrive at cost of compensation to the affected party.

Application of these principles can greatly help in adjudicating and regulating AI systems and ensure fairness while promoting responsible actions among the stakeholders of AI.

3.3. Economic Development
The set of principles, strategies and policies that are primarily meant to promote and sustain inclusive economic development within a region or a country form the basis of the doctrine of economic development. This doctrine incorporates sustainable growth, investment in human capital, infrastructure development, industrialization and diversification, promotion of innovation and R&D activities, private sector development, trade and global integration, poverty eradication, employment creation and inclusiveness, rural and agricultural development, good governance (ease of doing business), institutional strengthening and overall economic well-being of a population. Though, depending on the socio-cultural fabric of the region the degree of application of these elements may differ, for attaining a balance between regulating AI and attaining economic development these principles are imperative for development of a framework.

3.4 Criminal Law
The doctrine of criminal law ensures a crime free society where every citizen has equal protection of life and fundamental rights, freedom, fairness and justice. This doctrine also ensures that perpetuators of crime are prosecuted and punished for criminal offences. Retribution (the offender must suffer in proportion to harm caused by him/her), deterrence (the offender must refrain from reoffending through fear of punishment and also to set forth precedents for society and thereby sending an unequivocal message that others too will have to face consequences for their offences) and social control (standards and norms established as law to be followed by the society) are the three main functions of a criminal law. The cruxes of these functions are prevention of harm to society. AI regulating framework too calls for liability for harm and prevention of harm ensuring accountability of all stakeholders.

4. LESSONS LEARNED
A structured, coherent and eclectic approach for development of framework to regulate AI requires a thorough consideration of the context, purpose and the scope of the framework. The context, purpose and the scope need to be defined in terms of development, deployment, utilization and decommission of AI systems considering the interaction and the impact of this system if it fails to perform as expected under legal compliance duly considering ethics and values of the society. The basis for PEEC framework is presented at Figure 3.
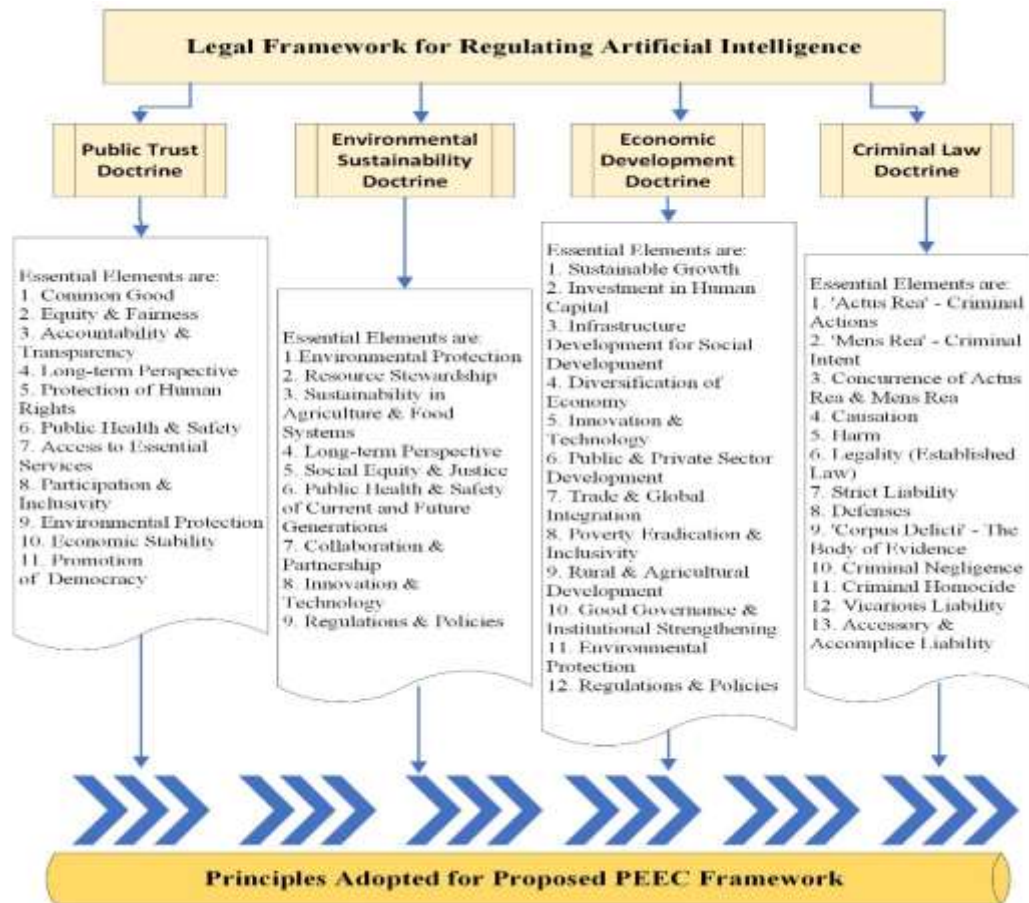
EPRA International Journal of Research and Development (IJRD)

Figure 3 Basis for Proposed PEEC Framework

Though, the doctrines of public interest, environmental sustainability, economic development, and criminal law deal with diverse aspects of the society, there are some shared features and principles which collectively focus on well-being of society by promoting justice and responsible governance. The similarities among these doctrines that would justify adoption of 'PEEC' framework for AI systems are listed below.

a) **Harmonizing Individual and Collective Interests:** Each doctrine aims at harmonizing individual rights, interests, and actions, and social welfare. All four doctrines take into considerations individual behaviour and how their decisions impact the society.

b) **Long-Term Perspective:** Each doctrine accentuates the significance of taking into consideration long-term consequences and outcomes. The core of these doctrines lies in the fact that each prioritizes actions that must have lasting positive effects irrespective of the fact whether it is for sustainable economic growth, environmental protection, upholding public interest, or administering justice.

c) **Accountability and Responsibility:** Accountability and responsibility is at core of all four doctrines. These doctrines demand responsible behaviour and decision-making for all actions such as holding individuals accountable for criminal acts, ensuring responsible resource use for environmental sustainability, or promoting ethical governance for economic development.

d) **Protection of Human Rights and Welfare:** All four doctrines are aimed at protecting and enhancing the fundamental human rights, prosperity, and welfare of individuals and societies. Each doctrine prioritizes the betterment of society over all other individual and collective actions of people.

e) **Ethical Considerations:** The principles of fairness, equity, and justice are all central to all four doctrines. These considerations form the fulcrum of all future practices and policies to benefit not an individual but to the society as a whole.

f) **Legal Frameworks and Regulations:** Each doctrine encompasses the creation and enforcement of lawful frameworks & regulations. Though, only the criminal law has a strong legal structure to govern behaviour, ensure compliance, and protect the common good of the society, and punish the guilty.

g) **Cooperation & Public Involvement:** Each doctrine lays emphasis on having collective and collaborative efforts among all stakeholders and calls for public participation. Public involvement for environmental decision-making, engagement of stakeholders for economic development planning, or for ensuring a fair trial in criminal law are all illustrations of participatory approaches of these doctrines that promote informed, just, and effective outcomes.

h) **Sustainability and Resilience:** All doctrines lay emphasis on the significance of sustainable practices and resilience in matters relating to environmental sustainability, economic development, and public interest. These doctrines identify the need to safeguard that action and policies are long-term, versatile and acquiescent to changing circumstances.

i) **Promotion of Quality of Life:** Eventually, all four doctrines attempt to improve the quality of life of people and societies. May it be the case of nurturing economic growth for nation, protecting the environment for our future generations, ensuring justice for social good, or advancing overall public well-being, they share the goal of augmenting people's lives.

Although, these resemblances exist, it's vital to distinguish that each doctrine has its exclusive scope, focus, and specific principles that would govern its application within a societal and legal context. The regional, national and international government can use the above stated similarities to develop the purpose, focus and scope of AI regulations within their jurisdictions.

Although, these resemblances exist, it's vital to distinguish that each doctrine has its exclusive scope, focus, and specific principles that would govern its application within a societal and legal context. The regional, national and international government can use the above stated similarities to develop the purpose, focus and scope of AI regulations within their jurisdictions.

5. PROPOSED 'PEEC' FRAMEWORK

The following governing principles as PEEC framework in deployment, development, use and decommissioning of AI systems are proposed that addresses the doctrines and common elements of public interest, environmental sustainability, economic development, and criminal law. Successful initiatives of Indian Government from other sectors to further illustrate upon these proposed principles are also presented at Table 2.

Table 2 PEEC Framework & Examples of Initiatives of Government of India

Sl.	Proposed principles of PEEC Framework to be employed in deployment, development, use and decommissioning of AI System	Government of India Initiatives to illustrate the use of proposed principle
1	**Transparency and Accountability**	Transparency by way of : • Citizen's Charter (1997) • Right to Information Act (2005) • E-Governance (2006) • Centralized Public Grievance Redress and Monitoring System (CPGRAMS) (2007) Accountability by way of: • Central Vigilance Commission (1964) • Comptroller & Auditor General (1971) • Lokpal / Lokayukt (2014) • Public Interest Litigation (1979)
2	**Data Security and Data Privacy**	• The proposed Digital Personal Data Protection Bill (DPDP) (2022)
3	**Ethical Considerations**	• Code of Ethics for Indian Audits and Accounts Department (2012)
4	**Environmental Impact Assessment**	• Environmental Impact Assessment EIA (2006) • Proposed EIA Notification (2020)
5	**Economic Incentives and its impact on society and Innovations**	• Make in India (2014) • Digital India (2015) • 100 Smart Cities (2015) • Skill India (2015)

Sl.	Proposed principles of PEEC Framework to be employed in deployment, development, use and decommissioning of AI System	Government of India Initiatives to illustrate the use of proposed principle
6	**Risk Management and Liability**	• Public Liability Insurance Act (1991)
7	**Public Participation and stakeholder's Consultation**	• 'MyGov' Framework for Citizen Engagement in e-governance (2014)
8	**Law Enforcement and Criminal Activities**	• Indian Penal Code (IPC) (1860) • Criminal Procedure Code (CrPC) (1974) • Indian Evidence Act (1872) Proposed Bharitya Nyay Sahinta Bill (2023) shall replace IPC, Bharatiya Nagarik Suraksha Sanhita Bill (2023) shall replace CrPC and Bharatiya Sakshya Bill (2023) shall replace Indian Evidence Act.
9	**Interdisciplinary Collaboration**	• National Mission on Interdisciplinary Cyber-Physical Systems (NM-IPCS) (2018) • Echo-Network (2019) • Indian National Commission for Cooperation with UNESCO (2023)

The gravity of these 'PEEC' principles should be adjusted to suit the societal, economic, political, jurisdictional and contextual factors. As the AI technologies are constantly evolving and developing, the regulatory framework too shall have to evolve and develop to keep abreast to the ever changing needs and requirements of the society.

Long-term collaborated efforts from experts of legal, technical, scientific and policy domain should ensure the effectiveness of the proposed AI framework. The implementation of 'PEEC' framework shall require a formation of teams, training, identification, and assessment of hurdles at local, national and international levels to achieve the ultimate goal of well-being of the society.

The potential positive & negative impacts of the proposed 'PEEC' framework and suggestions to curb its negative impacts are presented at Table 3.

Table 3 Impacts of PEEC framework with Suggestions

Sector/ Stakeholder	Potential Positive Impacts of Proposed PEEC Framework	Potential Negative Impacts of Proposed PEEC Framework	Suggestions to Curtail Negative Impacts
Individual	1. Protection of Human Rights 2. Privacy & Data Protection 3. Transparency & Trust 4. Equitable Access to Services	1. Overregulation 2. Limited Customization	1. Raise Awareness & Education 2. Foresee the Adverse Effects of Misuse of AI 3. Seek Tailored Solutions
Businesses	1. Innovation and Development 2. Ethical AI Development 3. Responsibility and Liability	1. Barriers to Innovation 2. Limited New Entry 3. Slow Growth	1. Empower Cross-Functional Collaboration 2. Stay Open to External Partnerships
Government	1. Enforcement 2. Public Trust 3. Balancing Interests 4. Energy Efficiency & Resource Management 5. Cross – Disciplinary Collaboration	1. Lack of Flexibility 2. Administrative Burden	1. Training and Skill Development 2. Standardizing Operating Procedures 3. Outsourcing Non-Core Functions 4. Continuous Assessment for Improvement
Society	1. Economic Growth 2. Environmental Protection 3. Safeguarding of Public Interest 4. Prevention of Crime	1. Reduced Access 2. Inequitable Impact 3. Innovation Disruption	1. Training & Feedback 2. Regular Assessment & Reviews 3. Phased Implementation 4. Risk Management

6. PROPOSED 'PEEC' RESOLUTION

The primary instrument of government's policy – a resolution, making explicit the question of structure, spread, execution or procedure to regulate AI technologies based on the proposed 'PEEC' principles has to be developed. The first part of the resolution ought to recognize the guidelines for arresting the ill-effects of the AI technologies considering the national, societal, cultural, economic, political and environmental factors. Rather than directly establishing the protection/ regulating framework these guidelines shall constitute and emphasize the general considerations that may be adopted by the state after due local/ regional negotiations that corroborates the national policies. This shall promote and ensure healthy debate for adoption of common approach with key priorities/ guiding principles of the state. To match these principles, the second part of the resolution should establish a complete framework with provisions such as unambiguous objectives of regulating provisions for AI, strategies to achieve these objectives including monetary provisions, and exercising scrutinising and control through expert panel. The resolution shall be a large umbrella under which explicit general regional agreements based detailed and ambitious concrete legal framework on AI technologies takes shape. We urge that such an instrument be developed by all nations with all deliberate speed.

At the end of the day, the effectiveness of the AI regulations would be governed by the political will of the state enacting it. International institutions are toothless tiger without the states' consent to intervene/ govern local AI regulations. International institutions should thrive hard to encourage states to cooperate and lessen the potential risk posed by malefic use of AI technologies. Ultimately, any technology should only aid humankind and not destroy it.

7. CONCLUSIONS

The study has reconnoitred the need for an eclectic framework for regulating AI. The articulated doctrines of public interest, environmental sustainability, economic development, criminal law and its interaction with AI, public and society was studied to propose 'PEEC' framework that addresses all these principles. The proposal lays out a holistic approach to address the existing gaps and ensures a greater effectiveness in safeguarding the public interest while regulating AI technologies.

Legislative modifications can be a complex task. To aid the legislature the potential positive & negative impacts of 'PEEC' framework are highlighted with due suggestions to curb its negative values. The proposed 'PEEC' framework is a dynamic tool that will cultivate transparency, accountability, data security, ethical, societal, economical, & political affairs encircling present and future AI technologies. Since the ubiquitous AI technologies are ever evolving and developing, the gravity of 'PEEC' principles shall be attuned to keep abreast of the times with changing needs and requirements of the people. The study also proposes a general structure for 'PEEC' resolution for adoption by states.

The proposed 'PEEC' framework is an important step forward in addressing the challenges posed by malefic use of AI systems allowing harnessing its fullest potential. This paper shall provide valuable understandings and recommendations for policymakers empowering them to arrive at informed decisions to positively impact the society. Moving ahead, the proposed framework has the potential to safeguard inclusive well-being of the society without compromising stakeholders' interest. The proposed 'PEEC' framework is a win-win situation for all stakeholders of AI.

8. REFERENCES

1. *West DM, Allen JR. How artificial intelligence is transforming the world. Report. April. 2018 Apr 24; 24: 2018.*
2. *Chassignol M, Khoroshavin A, Klimova A, Bilyatdinova A. Artificial Intelligence trends in education: a narrative overview. Procedia Computer Science. 2018 Jan 1; 136:16-24.*
3. *Jiang F, Jiang Y, Zhi H, Dong Y, Li H, Ma S, Wang Y, Dong Q, Shen H, Wang Y. Artificial intelligence in healthcare: past, present and future. Stroke and vascular neurology. 2017 Dec 1; 2(4).*
4. *Biegel JE. The future of artificial intelligence (AI) in manufacturing. Computers & Industrial Engineering. 1986 Jan 1; 11(1-4):276-9.*
5. *IA G, Miglionico A. Artificial intelligence and automation in financial services: the case of Russian banking sector. Law and Economics Yearly Review. 2019; 8(1):125-47.*
6. *Guha A, Grewal D, Kopalle PK, Haenlein M, Schneider MJ, Jung H, Moustafa R, Hegde DR, Hawkins G. How artificial intelligence will affect the future of retailing. Journal of Retailing. 2021 Mar 1; 97(1):28-41.*
7. *Frey CB, Osborne MA. The future of employment: How susceptible are jobs to computerisation? Technological forecasting and social change. 2017 Jan 1; 114:254-80.*
8. *Pu J. Integration of Arts and Crafts in Artificial Intelligence Environment. InJournal of Physics: Conference Series 2020 Jun 1 (Vol. 1574, No. 1, p. 012162). IOP Publishing.*
9. *Susskind RE, Susskind D. The future of the professions: How technology will transform the work of human experts. Oxford University Press, USA; 2015.*
10. *Poola I. How artificial intelligence in impacting real life every day. International Journal for Advance Research and Development. 2017; 2(10):96-100.*

11. Bostrom N, Yudkowsky E. The ethics of artificial intelligence. InArtificial intelligence safety and security 2018 Jul 27 (pp. 57-69). Chapman and Hall/CRC.

12. Roselli D, Matthews J, Talagala N. Managing bias in AI. In Companion Proceedings of the 2019 World Wide Web Conference 2019 May 13 (pp. 539-544).

13. Day C. The Future of Misinformation. Comput. Sci. Eng.. 2019 Jan 1; 21(1):108.

14. Brundage M, Avin S, Clark J, Toner H, Eckersley P, Garfinkel B, Dafoe A, Scharre P, Zeitzoff T, Filar B, Anderson H. The malicious use of artificial intelligence: Forecasting, prevention, and mitigation. arXiv preprint arXiv:1802.07228. 2018 Feb 20.

15. Scharre P. Army of none: Autonomous weapons and the future of war. WW Norton & Company; 2018 Apr 24.

16. Butcher J, Beridze I. What is the state of artificial intelligence governance globally? The RUSI Journal. 2019 Sep 19; 164(5-6):88-96.

17. West DM, Allen JR. How artificial intelligence is transforming the world. Report. April. 2018 Apr 24; 24: 2018.

18. Ponce A. A Law on Robotics and Artificial Intelligence in the EU? ETUI Research Paper-Foresight Brief. 2017 Oct 3.

19. Shane Tews, Regulating Artificial Intelligence: The Need, Challenges, and Possible Solutions. https://www.aei.org/technology-and-innovation/regulating-artificial-intelligence-the-need-challenges-and-possible-solutions/. Accessed 02.08.2023.

20. Darrell M. West & John R. Allen. How artificial intelligence is transforming the world. https://www.brookings.edu/articles/how-artificial-intelligence-is-transforming-the-world/. Accessed 02.08.2023.

21. European Parliament. Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts. Available at:
https://www.europarl.europa.eu/doceo/document/TA-9-2023-236_EN.html#:~:text=This%20Regulation%20lays%20down%20a,thus%20preventing%20Member%20States%20from. Accessed 03.08.2023.

22. Gerston LN. Public policy making: Process and principles. Routledge; 2014 Dec 18.

23. Francesca Rossi. Artificial intelligence: potential benefits and ethical considerations. European Parliament Briefing. https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/571380/IPOL_BRI (2016)571380_EN.pdf. Accessed 02.08.2023.

24. Züger, T., & Asghari, H. AI for the public. How public interest theory shifts the discourse on AI. AI & Society, 2023, 38(2): 815-28.

25. Nti EK, Cobbina SJ, Attafuah EE, Opoku E, Gyan MA. Environmental sustainability technologies in biodiversity, energy, transportation and water management using artificial intelligence: A systematic review. Sustainable Futures. 2022 Jan 1; 4: 100068.

26. Ashfaq A, Kamran M, Rehman F, Sarfaraz N, Ilyas HU, Riaz HH. Role of artificial intelligence in renewable energy and its scope in future. In2022 5th International Conference on Energy Conservation and Efficiency (ICECE) 2022 Mar 16 (pp. 1-6). IEEE.

27. Nishant R, Kennedy M, Corbett J. Artificial intelligence for sustainability: Challenges, opportunities, and a research agenda. International Journal of Information Management. 2020 Aug 1; 53: 102104.

28. Jensen, G.C.A., Nielsen, M.M., & Henriksen, J.E. Artificial intelligence for sustainability: a review of the literature. Sustainability, 2020, 12(2): 839. doi:10.3390/su12020839.

29. Pinto, A.P.S., Carvalho, R.P.P., & Carvalho, M.A.R. The role of artificial intelligence in achieving sustainable development goals. Sustainability, 2021, 13(1): 167. doi:10.3390/su13010167

30. Joshi, S.R., Cattaneo, C.A., & Singh, S.K. Sustainable AI: AI for sustainability and the sustainability of AI. Sustainable computing: informatics and systems, 2021, 28: 100579. doi:10.1016/j.suscom.2021.100579

31. Zhao P, Gao Y, Sun X. How does artificial intelligence affect green economic growth?—Evidence from China. Science of the total environment. 2022 Aug 15;834:155306.

32. Roberts H, Cowls J, Hine E, Morley J, Wang V, Taddeo M, Floridi L. Governing artificial intelligence in China and the European Union: Comparing aims and promoting ethical outcomes. The Information Society. 2023 Mar 15;39(2):79-97.

33. Robles P, Mallinson DJ. Catching up with AI: Pushing toward a cohesive governance framework. Politics & Policy. 2023.

34. Hallevy G. When robots kill: Artificial intelligence under criminal law. UPNE; 2013 Apr 9.

35. Lagioia F, Sartor G. Ai systems under criminal law: a legal analysis and a regulatory perspective. Philosophy & Technology. 2020 Sep; 33(3):433-65.